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A FOREST ECONOMY FOR THE NATION

as related to the

NORTHERN ROCKY MOUNTAIN TERRITORY //

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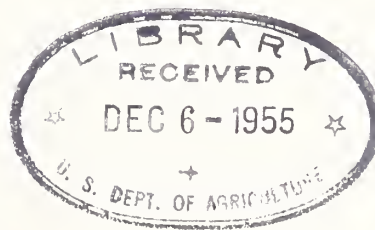
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"We ruin the lands that are already cleared and either cut down more wood, if we have it, or emigrate into the western country. . . A half, a third, or even a fourth of what land we mangle, well-wrought and properly dressed, would produce more than the whole under our system of management; yet such is the force of habit, that we cannot depart from it."

- George Washington.



## HOW THIS MATERIAL IS TO BE USED

This discussion is prepared for use by forest officers only. It is intended to describe "The Situation" in the northern Rocky Mountain territory in a general way, and the application of the remedies - THE PROGRAM - the recommended national program - to this territory. It is not intended that it will take the place of all the material emanating from the Chief's office; much of that will have to be read and absorbed as supplemental or reference material at least.\* But it is hoped it may serve to facilitate getting adequate understanding of that material.

This discussion has not been prepared for public distribution and, of course, it is not expected that it will be made available to any of the public just as it stands, but a forest officer may use any part which satisfies him as acceptable in connection with any material that is prepared locally, or it may serve as a suggested outline for presenting local material.

In the written discussions, figures and statistics have been sparingly used. Tables and graphs are concentrated instead in the Appendix. From time to time as regional or subregional data are compiled, additional tables and graphs will be distributed.

Despite attempt to make this document reasonably comprehensive, it is recognized that inadequate discussion in some places and perhaps omission of some aspects that should have been covered will be found. It is expected that forest officers using this material will freely supply for themselves omissions so discovered.

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\* Particularly should be read and studied the "Summary of Background Material," "The Synopsis of the Program," "Questions and Answers About the Forest Situation in the United States," which were prepared in mimeographed form in Washington, and pages 15 to 22, inclusive, of "A National Forest Economy." These are the minimum with which to become familiar. Very desirable is the study and reading of the "Summary of the Recommendations" and "A National Forest Economy." Some review of existing policies, instructions, etc., on various classes may also be found desirable.



## CONTENTS

	<u>Page</u>
The Forest Service Objectives. . . . .	1
Foreword . . . . .	3

### THE SITUATION

Major Aspects of the Forest Land Situation . . . . .	5
Proper Land Use Must Be Assured. . . . .	5
The Problem of Producing and Making Available the Useful Products and Services. . . . .	7
Timber Supplies and the Public Welfare . . . . .	8
Other Services and Public Welfare. . . . .	8
What Is Needed . . . . .	8
Problems Inherent Primarily in Private Forest Lands	
Timber Supplies and the Lumber Industry	
The General Situation . . . . .	10
Northern Idaho. . . . .	11
Northeastern Washington . . . . .	12
Western Montana . . . . .	12
Eastern Montana . . . . .	13
Causes Underlying the Private Forest Land Situation. . . . .	13
Needs of the Private Land Situation. . . . .	15
The Problem of Protection from Fire (Other than National Forest Lands)	
The Situation . . . . .	16
Needs . . . . .	17
Problems Inherent in State and County Forest Lands	
The Conditions - State Lands . . . . .	18
The Conditions - County Lands. . . . .	18
The Causes - State Lands . . . . .	19
The Causes - County Lands. . . . .	19
The Needs. . . . .	20
The Problems Inherent in Farm-Forest Lands	
The Conditions . . . . .	21
Needs. . . . .	22
Problems Primarily Involving the National Forests	
The Lumber Industry and the National Forests	
The Conditions. . . . .	23
Needs . . . . .	23
The Problem of Nonreproducing Lands in the National Forests	
The Conditions. . . . .	24
Needs . . . . .	25
The Fire Problem in the National Forests	
The Conditions. . . . .	25
Increased Difficulties of Fire Protection Job . . . . .	25
Effect on Other Activities. . . . .	25
The Needs . . . . .	26
The Problem of Inaccessibility in the National Forests	
The Conditions. . . . .	27
Needs . . . . .	27

The Problem of Range Administration in the National Forests	
The Conditions. . . . .	27
Needs . . . . .	28
The Wildlife Problem in the National Forests	
The Conditions. . . . .	28
Needs . . . . .	29
The Problem of Destructive Insects and Tree Diseases in the National Forests	
The Conditions. . . . .	30
Needs . . . . .	30
The Watershed Problem	
The Conditions. . . . .	30
Needs . . . . .	30
The Problem of Forest Recreation in the National Forests	
The Conditions. . . . .	31
Needs . . . . .	32
The Problem of Public Domain Forest Lands	
The Conditions. . . . .	33
Needs . . . . .	33
The Problem of Diverse Ownership of Forest Lands . . . .	34
Need. . . . .	35
The General Forest Insect and Disease Problem	
Insects. . . . .	36
White Pine Blister Rust. . . . .	36
<u>RECOMMENDED REMEDIES AND PROGRAM. . . . .</u>	37
Recommended Remedies Applicable to Private Lands . . . .	38
Cooperation Including Regulation . . . . .	39
Public Regulation	
The General Proposal . . . . .	39
Existing Regulation. . . . .	42
Probable Character of Regulation in the Northern Rocky Mountain Territory . . . . .	43
Degree of Importance of Regulation in the Northern Rocky Mountain Territory . . . . .	44
Cooperative Forest Extension . . . . .	46
Industrial Forest Lands. . . . .	46
State Forest Lands . . . . .	46
Farm Forest Lands. . . . .	47
Recommended Remedies in Forest Extension . . . . .	47
To Meet the Needs for An Adequate Forestry Extension Job. . . . .	47
To Meet the Needs for An Adequate Farm Planting Program. . . . .	48
Utilization Extension Recommended	
The Proposal . . . . .	49
The Recommended Program. . . . .	50
Recommended Cooperative Fire Protection. . . . .	51
Recommended Program for Cooperative Forest Planting. . .	52
Recommended Program for Cooperative Insect and Disease Control. . . . .	53

Recommended Program for Cooperative Forest Credits	
The Conditions - Reason Therefor . . . . .	54
Recommended Program of Correction. . . . .	54
Means . . . . .	54
Justification . . . . .	55
Application to Northern Rocky Mountain Territory	55
Recommendations for Cooperative Sustained Yield Units. .	56
Public Acquisition of Forest Lands	
What Public Agency is Likely to Acquire. . . . .	59
When to Acquire. . . . .	60
What to Acquire. . . . .	60
How Acquired . . . . .	60
The Need . . . . .	60
Reimbursement in Lieu of Taxes	
The General Proposal . . . . .	64
Recommended Plan . . . . .	66
Recommended Remedies and Program to Meet the Needs for	
State and County Lands . . . . .	68
Recommended Remedies and Program to Meet Problems on	
National Forest Lands. . . . .	69
To Take Care of Public Domain Forest Lands . . . . .	71
Recommended Program for Research . . . . .	72

#### APPENDIX

Progress of Blister Rust Control Through Fiscal Year 1941	74
Brief Outline of A National Forest Economy . . . . .	75
Table 1 - Forest Land Statistics . . . . .	78
Table 2 - Ownership of Commercial Sawtimber Areas. . . . .	78
Table 3 - Timber Resources . . . . .	79
Table 4 - Commercial Timber Resources by Ownerships and	
Principal Species. . . . .	79
Table 5 - Average Annual Cutting Drain from Commercial	
Sawtimber Stands (Based on Four-Year Average	
1935 to 1938, Inclusive) . . . . .	80
Table 6 - A Comparison of Percent of Species in Timber	
Inventory to Timber Drain. . . . .	80

1. The first part of the report is a general  
description of the project. It includes the  
title, the objectives, the scope, and the  
methodology. The title is "The Effect of  
Temperature on the Rate of Reaction of  
Hydrogen Peroxide with Potassium Iodate".  
The objectives are to determine the effect of  
temperature on the rate of reaction and to  
determine the activation energy of the reaction.  
The scope is to study the reaction at  
temperatures between 20°C and 40°C. The  
methodology is to use the method of initial  
rates.

2. The second part of the report is a  
description of the experimental procedure. It  
includes the list of materials, the apparatus,  
the procedure, and the results. The materials  
are potassium iodate, hydrogen peroxide,  
sulfuric acid, and sodium metabisulfite.  
The apparatus are a conical flask, a  
stopper, a thermometer, and a stopwatch.  
The procedure is to mix a known volume of  
potassium iodate solution with a known  
volume of hydrogen peroxide solution at a  
known temperature. The time taken for the  
reaction to complete is measured. The  
results are as follows:

Temperature (°C)	Time (s)
20	120
25	80
30	50
35	30
40	20

3. The third part of the report is a  
discussion of the results. It includes the  
interpretation of the data, the calculation of  
the activation energy, and the conclusion.  
The interpretation of the data is that the  
rate of reaction increases with temperature.  
The calculation of the activation energy is  
as follows:

Temperature (°C)	ln k
20	4.71
25	4.90
30	5.10
35	5.30
40	5.50

The activation energy is 50 kJ/mol.

4. The fourth part of the report is a  
conclusion. It includes the summary of the  
findings and the recommendations for further  
study. The summary of the findings is that  
the rate of reaction increases with  
temperature. The recommendations for further  
study are to study the effect of the  
concentration of the reactants on the rate  
of reaction and to study the effect of a  
catalyst on the rate of reaction.

## THE FOREST SERVICE OBJECTIVES

The creation of the national forests several decades ago, with their stabilization since then on a firm basis, was a great progressive step in national forestry. Yet, a far greater forward-looking advancement for and by the people of the Nation would be the institution of a sound national economy for the many times more important forest lands not now in the national forests. The Nation-wide forest land situation is serious.

To look after the national forests creditably is an important part, but only a part of the job of the Forest Service. The people of the Nation look to, and depend upon, the Forest Service as a leader in all phases of forestry matters in the country. It is with a gratifying sense of properly meeting its responsibilities and accepted obligations of public service that the Forest Service recognizes its duty to inform the public fully and arouse it to the situation and the needs.

The program recommended is not for the aggrandizement of the Forest Service. What agency is to carry out the needed steps or administer the needed provisions is a secondary matter. The important point is that the needed steps be taken.

In this educational, informational undertaking the objective is expressed as:

To acquaint the public with the forest land situation, the reasons therefor, and the remedy, in order that it may understandingly, aggressively, and in its own interest, participate in putting American forestry in all its aspects upon a sound foundation.

Earle H. Clapp, Acting Chief of the Forest Service, states:

The educational campaign should first and foremost try to give an understanding of what the forest situation really is and what our forest problems really are. An understanding of the problem and a decided interest in it is much more likely to lead to the conviction that something must be done about it. This approach should insure a far greater support for the program itself. I have been a little afraid that the availability of a summary for the program and the unavailability of the background for it might lead to primary emphasis on the program itself without sufficient emphasis on the forest problem which makes the program necessary.

The goal of the Forest Service is an awakened public appreciation of the value of forest resources, an understanding of what has happened and will continue to happen unless corrective action is taken, and a widespread determination to see that the necessary action is taken.

Public attitude toward the situation is much like that of a healthy man toward his physical well being. He is inclined to take his good fortune for granted and do nothing to insure himself against accident or disease. Similarly, people are inclined to be indifferent about forest problems so long as the resources are apparently adequate. But the problems are too serious to delay corrective action if the public interest is to be properly served.

It is imperative that people see this picture, not alone as a purely local problem, but as a national situation. Local problems will, of course, have major interest and consideration. But it should be recognized that a national program is essential as an answer to local problems and to the permanent well being of each community.

This educational and informational effort is not intended to displace legitimate efforts to promote action, such as fire prevention, extension of exchange authority, purchase appropriations, expansion of Clarke-McNary cooperation, extension of recreational construction, maintenance and administration, which are parts of regional action programs. The two efforts - promoting action in the public interest and extension of enlightened public knowledge concerning the forest land situation, the problems, the remedies needed, etc., are to be carried on concurrently.

There is another way to look at this association of the national program and the local "action" program. Local problems lead to a local action program. The accomplishment of the local program is essential and must be pressed. However, effort should not be limited to this for several reasons, viz: (1) The objective of the educational program is to put the Nation's forest policy on a sound foundation; (2) almost all of any local program is in large part, if not wholly, dependent on a national program (examples, local progress in acquisition, cooperative insect control, modification of tax reimbursement to local taxing units, expansion of cooperative fire control, etc., are dependent on national action), and hence requires a national "pulling together" of all those interested to give it strength. However, the local problems and program are exactly the points of common interest on which local support and action on a national program are soundly founded.

## FOREWORD

The forest zone of the northern Rocky Mountain territory is like a vast estate of 30 million acres upon which live some half million people.

A limit drawn around this empire of forests, mountains, lakes, streams, small towns, and farming communities will include most of the elements necessary to maintain a civilization.

The consequences if the forest lands are destroyed can be well imagined - a country of eroded hillsides with damaging flashy floods; excessive water storage costs; men looking for work; farming and general business at a low level; county and State tax incomes reduced; wildlife practically gone; no fish life in the muddy streams; recreation as now enjoyed impossible.

Overdrawn, yes, but there has been a trend in that direction. For the past 50 years thousands of acres of once virgin forest lands have been declining in their ability to contribute to employment or to the support of local communities.

Abandoned sawmills are in evidence. Important watersheds have lost much of their protective cover. Decadent towns with unpainted buildings stand as mute monuments to an era of waste and ill-advised conversion of forest lands.

If this trend be left unchecked the dire consequences described will become predominately established in the region. It will then be too late to do much about it.

This territory can enjoy reasonably permanent employment and general prosperity. It has the resources and the opportunities; but a sound program for all forest lands - Federal, State, and private - is fundamental.

The Nation, too, needs the forest products which can be so well produced here, as well as the reflected national benefits of stability in this region.

The fundamental importance of this program is emphasized in this time of stress when national defense from both external attack and internal dislocations is accepted as an emergency task in meeting the threat to our established national institutions - our liberty - our "way of living."



THE SITUATION



## MAJOR ASPECTS OF THE FOREST LAND SITUATION

The over-all situation goes much deeper and affects much more than mere timber supplies. Of greatest importance it has to do with human beings, their pressing concerns such as stability for industry and labor, the permanence of social and economic structures of communities and regions.

Within these issues are the problems of land use and best land use - problems of producing and making available the products and services; special problems inherent in private forest lands, State and county forest lands, and Federal forest lands.

Interrelated as these are they are further complicated by the complex, diversified and cross-cutting problems of intermingled ownerships which are themselves responsible for many of the existing difficulties.

And there is the handicap of inadequate knowledge of physical, social, and economic factors controlling the wise, managed use of forest land resources and services.

### PROPER LAND USE MUST BE ASSURED

So that it may contribute to, and not be a load on public welfare, land must be put to its best economic use.

With a few exceptions of comparatively minor importance, the present forest land area has greater usefulness in forest growth than in any other condition. Often it has no value for any other use, but unless it is given attention its productiveness continues to be substantially reduced if not wholly eliminated. It becomes virtually unused land.

This is not only a waste of resources, but there is also imposed an actual burden on other resources and the products of human effort. Unused lands do not carry themselves.

It is crucial for the Nation to make a firm determination between two alternatives. Shall lands chiefly valuable in forest growth be maintained and used in that condition? Or shall large abandonment to chance continue as in the past? How far can and should the loss and burden of nonuse be sustained?

Also involved is a problem of ill-advised use. The northern Rocky Mountain territory is still in relatively pioneer state. Conversion of forest lands to other uses is still going on. Much of such conversion has proved to be sound, although experience has demonstrated a large part was unwise.

Mostly land in forest is chiefly useful if kept in that state, yet there are exceptions. Proper use of forest land depends on determination of what use it is best suited for. Such classification must comprehend the social and economic needs for uses other than forest, together with the physical qualifications of the land.

In such classification for use a weighty factor is that most forest land can be used for two or more purposes simultaneously. This unique multiple-use quality is a precious asset giving forest land capacity to contribute in more ways than one.

Examples of the consequences of both nonuse and ill-use are prevalent the country over.

In Pend Oreille County, Washington, a quarter of a century ago, extensive areas of forest lands were settled with the aim of ultimately converting them into permanent farm homes. Intermingled tracts, supporting good timber, were acquired by lumbering interests. The poorer lands having no promise for agricultural development, or carrying no valuable mature timber, were allowed to shift for themselves subject to vicissitudes of destruction by natural and human causes.

Two decades later the timber had been almost entirely removed, a large part of the lands repeatedly burned over and reduced to a state of nonuse. The intermingled agricultural properties failed to produce a satisfactory economic and social livelihood for the occupants who consequently were in large part on relief.

Here, within a district of more than half a million acres were nonuse and ill-use, resulting in steadily increasing burden on other resources. There was no promise of reversing the situation so as to have the land contribute instead to human welfare, until, after use classification, the lands were again put to use in growing forest.

In the counties in northern Idaho are extensive and increasing acreages of formerly valuable timberlands that have been cut over and burned. They supported industry and homes, furnished labor, and provided a base for tax incomes to local governmental units. Abandoned, they have reverted to the counties through tax foreclosure. Without assurance of rehabilitation and care they remain practically unused.

The need of assuring that forest land is put to its best economic use is impelling in the northern Rocky Mountain territory where forest land is so pre-eminent a part of the natural resources.

THE PROBLEM OF PRODUCING AND MAKING AVAILABLE  
THE USEFUL PRODUCTS AND SERVICES

The Nation's forest land, wisely used, is adequate to meet requirements for its products and services; but in assurances for continuous production of these products and services the Nation is not so well off.

Forest lands comprise one-third of the continental United States, and directly or indirectly help support nearly one-tenth of its population.

Yet on the whole the forests are still being exploited without thought of future growth. The volume of old growth forests is steadily decreasing. Second growth forests meet destruction about as fast as their rate of growth. Forest communities are traveling the road to desolation and stagnation. Fertile valleys and cities are threatened by erosion and floods.

Living things, forests can be cropped to contribute stability and security year after year to dependent communities, to reduce the load of relief, to create new and permanent wealth, and solve social and economic problems consequent to nonuse or misuse.

Only about one-third of the Nation's 630,000,000 acres of forest lands have assurance of such sound stewardship. This includes the one-fourth in Federal ownership, a part of the States' forests, and a small portion of those privately owned. The other two-thirds, which are privately owned, are by far the most productive, having over 90 percent of the total productive capacity and in general being most accessible and easiest harvested.

In the northern Rocky Mountain territory the master part of the problem of keeping forest lands productive concerns the private and county lands, although much of the State lands do not receive adequate foresighted care, and a measure of improved management is warranted on the Federal lands.

In this territory thousands of acres, once virgin forest, have steadily declined in their capacity for production and the process is still continuing. Recovery is all too slow or entirely lacking. Needed are rehabilitation and the forestalling of added depreciation; in short, the application to all forest lands of proved good forest land management practices comparable to those now the aim on national forest land. The various individual elements of the problem of keeping forest lands productive are separately discussed in later sections.

## Timber Supplies and the Public Welfare

The output of timber products in the northern Rocky Mountain territory far exceeds the local needs. Except for timbers for the mines, farm timbers, and fuelwood, the manufactured forest products are over 90 percent exported. It is primarily its contribution to local employment and industry that gives timber production its vital local importance. This aspect is fully discussed later in sections dealing with "Timber Supplies and the Lumber Industry," and "The Lumber Industry and the National Forests."

## Other Services and Public Welfare

The very extent of the forest lands in the northern Rocky Mountain territory emphasizes their importance as a valuable public asset. In fact, unless they are administered to make a maximum contribution to the use of other lands within the area, they exert a definite retarding influence upon the number of families that can find ways and means of making a living here.

Every community has a stake in these forest lands. The benefits are felt far beyond the boundaries of the territory. Timber and livestock products go to eastern markets. The forest cover influences the water supplies of communities from Bonnevillie on the west to the Mississippi River on the east. Nation-wide vacation use is increasing rapidly. The prosperity of the people living within the territory is in itself a part of national security.

This interdependence of communities is well illustrated by the effect of disasters in the dust-bowl States. Land abuse in the dust bowl has not only resulted in financial losses and acute human distress locally, but it has caused a westward migration bringing stranded families who are a serious problem. Western communities find difficulty in absorbing them, and in providing adequate incomes or educational opportunities for their children.

The protection and administration of all forest lands in the territory so as to make maximum contributions in fuelwood, water supplies, forage, recreation, employment, and other benefits, is, therefore, a part of this complex problem of developing and maintaining a more stable civilization locally, regionally, and nationally.

## What is Needed

The primary need is to get at the cause. To change a traditional philosophy of liquidation to one of perpetuating the basic wealth - the soil.

In other words, the policy followed in the management of the national forests, "the greatest good to the largest number in the long run," should be extended to all forest lands.

To do so it must be recognized that when the interests of the individual are not compatible with those of the public, the individual must make necessary adjustments to protect the general welfare.

But this means also that the rights of the individual shall be fully protected and he shall not be saddled with any part of the task or load which should properly be assumed by the general public.

### Use - Not Abuse

#### Forest Lands

#### Yours Today - Your Children's Tomorrow

This slogan typifies the spirit in which the situation should be met. It is desirable that all lands shall be classified as rapidly as possible and eventually put to that use which will yield the largest returns to the largest number of people - today and tomorrow.

Valuable forest properties must be protected from wasteful logging or grazing practices, from fire, insects or disease. Lands already laid waste should be restored to production.

Broadly, the needs are:

1. To determine the extent to which the public may justifiably go in protecting its interest in privately owned forest lands.
2. To define the responsibility of forest land-owners for keeping their lands in use, that is, reasonably productive.
3. To adopt and put into effect policies whereby private owners, the counties, the States, and the Federal Government assume their proportionate share of responsibility.
4. To increase further our knowledge of all natural, economic, and social aspects of managed use of forest land, its resources and services.

In practical application this eventually calls for a program broken down into a number of separate parts. Therefore, a number of specific remedies to meet the situation in the northern Rocky Mountain territory are suggested. These conform with the recommendations of the Forest Service to the Joint Congressional Committee for a national program. They are discussed under "Suggested Remedies."



## PROBLEMS INHERENT PRIMARILY IN PRIVATE FOREST LANDS

The difficulties impeding acceptable management in its most comprehensive sense of private forest lands are in most cases interwoven with such management of all other forest lands. Hence, consideration of the private forest land situation cannot in every case be entirely separated from the interrelationships with such other lands.

### Timber Supplies and the Lumber Industry

#### The General Situation

(The Inland Empire, as defined in this discussion, extends from the Continental Divide in Montana west to and including the forested areas of northeastern Washington.)

In this primarily a forested region where 77 percent of the total acreage is classified as forest land lumbering vies with mining as the second most important industry and is not far behind agriculture, the principal industry.

Number gainfully employed in all forest industries of the region is 21,234 (1930 census); includes 10,038 for northern Idaho; 6,270 for northeastern Washington; 4,926 for western Montana. The 1940 census may show a decrease in lumber industry employment, but businesses associated with protection, management, use of timber or recreational resources should show a definite increase.

Liquidation and unbalanced utilization of the timber stands have brought the region face to face with a situation wherein the welfare of many communities is seriously threatened.

Admittedly, forest liquidation has brought some benefits: (1) Some good lands made available for cultivation where agricultural communities have since been established; (2) employment furnished in large volume; (3) lumber and other products supplied for settlement and development of the region and as a source of financial income; (4) railroads built into remote areas; and, (5) taxes from a large base help support local governments.

But, except for farming development, these benefits are transitory unless the industry is sustained. Much of the agricultural development, too, has been on lands unsuited for agriculture and the families so located are not self-supporting. The actual result is comparable to a feast about to be followed by something approaching a famine. Many communities built up by the industry are still basking in the sunshine of prosperity. Some have faith that the same conditions will continue or that some other resource will become available when needed to maintain their prosperity. But all reliable evidence shows this faith to be ungrounded.

In addition to rapid liquidation of the resources, a critical problem is the unbalanced utilization of the timber stands. The estimated 73 billion feet of commercially available sawtimber within the Inland Empire should sustain the lumber industry for 85 years, based on present cutting drain; but all of the mature merchantable timber in a stand cannot be utilized under present market conditions and some of it can never be utilized.

The pines have certain desired technical qualities and an established trade reputation. Spruce, larch, Douglas-fir and other species, though as satisfactory as pines for some purposes, lack consumer appeal because of their limited usefulness and poorer technical qualities when used. And for far away markets, only timber in high demand, and hence of high value, can be shipped.

White and ponderosa pine and pole-sized cedar are, therefore, the principal species that can be logged in any substantial amounts. Lumber is the principal timber product and this is almost all white or ponderosa pine. Of the other timber products a large proportion does come from secondary species, but the percentage of secondary species cut as compared with the total for all species, has dropped considerably for the past ten years. This appears to be more than a depression trend. At present there is no innate promise of an increased demand for these secondary species which will change trends.

More and more, therefore, it is the "cream" that is being harvested and large stands of secondary species are left.

Another problem exists because not all of the sawlog timber classified as commercial is loggable. Much of it will not be economically available without an increase in lumber prices or decrease in logging costs and a substantial part is so inaccessible that even optimistic forecasts give it no promise of ever being loggable.

#### Northern Idaho

White pine is the main support of the lumber industry in northern Idaho.

Industrial development in less than a generation has depleted the forest capital in private ownership to the extent that drastic reductions in production will in a few years follow the gradual reductions of the past two decades. The operations of only one company can now be termed "long time."

Because of natural ability to recover, cut-over land is generally reproducing, although with a much decreased proportion of the all-important white pine. But the speed of depletion, together with the methods employed, has created a constantly widening gap between virgin timber

cutting and merchantable second growth available, presaging a period of almost vanishing production fatal to communities and individuals alike.

The best and most advanced stands of young growth on past burned-over lands are 40 to 60 years old, too young by at least 30 and more like 50 years to meet milling requirements.

Allowable cut of white pine on the national forests is only 50 million feet annually, so that the public timber under management will be able to supply only a fraction of the existing milling capacity.

In the white pine counties the acreage of privately owned virgin timber has shrunk from 635,000 to 477,000 acres in the last seven years. Of this shrinkage of 208,000 acres, not more than 25 percent or about 50,000 acres has been cut over with a view to a second cutting. This better forestry practice is confined to one county which contains the largest amount of timber.

There is a 15- to 20-year cut of white pine left in private holdings on the basis of the present annual cut of 350 million feet (of which about 1/10 comes from the national forests). By combining the remaining white pine stands in all ownerships, the industry could be stabilized at 130 million feet. Even this degree of production - about 40 percent of the present, is not assured, since mill operations promise to continue at the present rate until only small scattered stands of this species are left on privately owned lands. And these will serve only limited districts of the present northern Idaho operating territory.

Present allowable cut of other species is 360 million feet and present cut, by contrast with white pine, under-runs this by 130 million feet; but the market demand for secondary species is too limited to promise that they can provide the industrial raw material to replace the white pine.

#### Northeastern Washington

The situation in northeastern Washington is even more dismaying than in northern Idaho; most of the large companies have already cut out. Almost all of remaining sawlog holdings are in small private ownership. Ponderosa and white pine make up 77 percent of the total cut of all species. Ninety-four percent comes from private, State, and county lands.

#### Western Montana

Western Montana has not progressed so far in depletion as has northern Idaho, largely because, except for the extreme western part, white pine occurs in less volume. Saw-mill operations are based principally on ponderosa pine which is less in demand and a less profitable timber.

Present cutting drain over the area as a whole is considered conservative, below allowable cut for ponderosa pine as well as for all species combined.

But on some lands ponderosa pine stands are being rapidly cut-over. The allowable cut is being exceeded in a number of large districts. Without adjustments there will be a repetition of the abandonment of sawmills such as has occurred in the past at Hamilton, St. Regis, and other points.

Large ownerships as well as small have no policy except to cut everything that will make a log. Result is that on private cut-over land no provision, other than accidental, has been made for any subsequent cut.

Remaining white pine stands in western Montana are so limited as to be a minor factor. They are being rapidly cut-over except for appreciable scattered stands of the species which are outside the commercial range of white pine or are economically inaccessible.

### Eastern Montana

Timber supplies for the industry in eastern Montana are not at all a problem. Because of the species, or inaccessibility to major freight routes to the Nation's lumber-consuming centers, eastern Montana does not export manufactured timber. Aside from the timber products that are here imported, local needs are met by small local operations for which there is a vastly greater quantity readily available that is currently growing than is the current drain through lumbering utilization.

### Causes Underlying the Private Forest Land Situation

The underlying causes of the present situation are the result of a complex combination of factors, all having their roots in a common traditional point of view that forest lands are to be used and exploited to serve current interest without regard to future needs.

Timberlands have been considered more like the package in which some goods are wrapped, to be discarded as no longer useful after the goods are removed.

Forest lands have not been considered in the same category with agricultural lands. The latter are traditionally recognized as wealth. Crops grown thereon are interest returned on the capital. It is in this aspect that the philosophy regarding forest lands is so different. The land, the soil, is the keynote, the foundation of wealth. Forest lands should also be considered as capital.

Unfortunately, the other conception still continues to a great degree among the general public, and even with many of

those in the lumbering industry. The forest wealth is measured in terms of billions of board feet only - not in the capacity for permanent production of more billions of board feet.

It should be emphasized here that during the last half decade the lumbering industry has more and more recognized the need for changing this tradition. Leaders of the industry and its national and regional organizations are staunchly pressing for the desired national reorientation.

This traditional liquidation or exploitation philosophy probably stems from the days of earliest settlement in the United States, when the forest was a hindrance to get rid of in putting land to agricultural use or for the development of towns and industry. Part is undoubtedly due to the long period of time required to produce a timber crop, ordinarily far beyond the active lifetime of current owners of land, together with the risks and discouragements involved.

(These statements are not made in criticism of private owners who have fallen in with this tradition, but to help explain a condition.)

Evidence of the liquidation philosophy is well illustrated in the history of the lumber industry in the Inland Empire.

Lumbering owner operators got their start in the Lake States. After "cutting out" they migrated West setting up new milling centers in the Inland Empire. They knew approximately how much timber they had. They knew that the rate of cutting planned - their aggregate milling capacity - would use up their raw material supply within a few decades.

Under ordinary conditions their customary cutting rate contemplated the most rapid liquidation economically feasible. When taxes, fire protection, and interest caught up with stumpage value, they were under pressure to accelerate liquidation even further up to what the market would absorb. In no known case has production been deliberately held to a stable, long-run volume when the market justified heavier operations.

The complex combination of factors which shackle the flourishing of accomplishments under a sound national policy for privately owned forest lands persists as a result of this traditional liquidation philosophy. These factors are numerous and their handicapping influences are interrelated. Many examples can be cited:

1. Inadequate protection from fire, insects, and disease is accentuated by the financial limitations beyond which private owners cannot go. This inadequacy applies primarily to young growth lands or other forest lands having no current commercial value.

2. Means for reforestation of lands deforested through fire or shortsighted cutting practices are inadequate.

3. Failure to appreciate that timber is a long-time crop has resulted in failure to differentiate between taxation policies applied to forest lands and its growing products and properties whose products or services can provide current returns.

4. Financing practices for timberlands are predicated on the concept that timber is an immediately harvestable crop and the land on which it stands is only a "package" for it.

5. Unsound classification of forest lands has resulted in over-optimism as to what use can be made of the land other than growing timber, and hence much cut-over private land has been put to ill-use.

6. Uncoordinated and conflicting plans for administration and use of forest lands resulting from diverse ownership has prevented desired cooperative action. This cooperation has not been stimulated and needed help in its attainment is not provided.

7. The principle of rapid conversion of property into cash, together with the financial strain of carrying forest properties, prevents any sound cutting budgets based upon long-time liquidation.

8. Owners apathetic toward recognizing and adjusting their practices to long-time public interest, or through inertia and past habits failing to perceive their own selfish interest, have been permitted to continue their way without any public effort for control such as is common and accepted in so many other directions in our civilized society.

9. Gathering of scientifically determined knowledge concerning the natural economic and social influences affecting all these foregoing factors has lagged far behind the need. Even such a project as extension of beneficial use of forest products is inadequately pressed. Yet research so far pursued indicates this to be a broad and gainful field.

10. As a secondary effect, the protection, development, administration, and use of Federal, State or other public forest lands and their products and services are deficient in legislative authority and financial means. This, in turn, reacts on privately owned land management.

#### Needs of the Private Land Situation

The needs are obvious from the conditions and the underlying causes. They are many and diverse, covering virtually the full field of THE PROGRAM recommended, with the exception of some, though not all, of the recommendations applicable to national forest lands. The needs in detail are best indicated by the various individual items of THE PROGRAM which are discussed in the second part of this discussion, "Recommended Remedies."

## The Problem of Protection from Fire (Other than national forest lands)

### The Situation

Forest fire protection is everywhere recognized as essential. Despite past progress in fire protection of private (and State) lands, there are 160,000,000 acres in the Nation without organized protection. Consequently, 16 percent of this area burns over every year with an estimated monetary loss of \$34,000,000, and with losses not directly measurable in money terms that are truly staggering.

In the northern Rocky Mountain territory cooperative fire protection on private and State lands was instituted several decades ago among the earliest in the Nation. Its first objective, now still predominant, was the safeguarding of commercially valuable timber stands only. The acreage under protection has gradually become greater during the years. Yet, at present, there are 950,000 acres of forest lands in the State of Idaho, and 1,100,000 acres in the State of Montana that are still unprotected. And of the protected acreage of 4,600,000 in Idaho, and 5,450,000 in Montana not more than two-thirds in each case can be considered to have adequate protection.

In recognition of the public interest in protection of nonpublic lands from fire and also of the public's too frequent responsibility for fires started, the policy of Federal cooperation in fire protection has been established by the Clarke-McNary Act, section 2. Such Federal contribution is made through the States. The Act requires a legally backed State protective system, approved by the Secretary of Agriculture as a condition for Federal cooperation.

The aggregate fire protection accomplishment on private (and State) lands is, throughout the Nation as a whole, at far from adequate standard primarily because lack of recognition of the urgency has been reflected in limited means for the work. The Federal appropriations have never been sufficient, not even reaching the \$2,500,000 authorization under the Act, which itself is far below the generally accepted idea of what the Federal contribution should be. Many of the States - including Idaho and Montana - contribute much below what is accepted as their equitable part in the task. In these States the private owners make the heaviest single contributions, and naturally they are primarily interested (and some of the States likewise) in only the protection of commercially valuable timber stands. Idaho and Montana State laws require State-wide forest fire protection, but performance lags behind and so far the legislatures have not appropriated sufficient funds to protect even all the State-owned forest lands.

A conservatively estimated cost of adequate fire protection of private and State forest lands in the Nation is \$18,500,000 annually. There is currently budgeted about one-half of this amount as follows:

Federal, under section 2, Clarke-McNary Act	\$1,989,000
States . . . . .	5,900,000
Private . . . . .	1,890,000
Total . . . . .	<u>\$9,779,000</u>

The present financial status (F.Y. 1940 figures) of forest fire protection on private and State lands in the northern Rocky Mountain territory (exclusive of northeastern Washington) is:

	<u>Montana</u>	<u>North Idaho</u>	<u>Total</u>
Estimated cost of adequate protection . . . . .	\$210,000	\$337,000	\$547,000
Current Federal contributions . .	26,000	51,000	77,000
Current State expenditures . . . .	19,000	63,000	82,000
Current private owner expenditures	63,000	69,000	132,000
Totals . . . . .	<u>\$108,000</u>	<u>\$183,000</u>	<u>\$291,000</u>

Ratio of expenditures to needs for adequacy . . . . .	52%	54%	53%
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As an essential to adequate fire protection a fire weather forecasting project has been instituted in the U.S. Weather Bureau with an annual appropriation of \$67,500. Fire protection agencies greatly depend on this service, but it is yet too limited in its accomplishments.

### Needs

Without forest fire protection, forestry is impossible and to do it only partially means a proportionately greater annual loss. All forest lands must be brought under protection. The scope and intensives of the work must be greatly increased; available expenditures from all sources must be just about doubled. The standards of performance by the States must be raised. Fire weather forecasting must be augmented and further developed.

## PROBLEMS INHERENT IN STATE AND COUNTY FOREST LANDS

### The Conditions - State Lands

As a whole State forest lands receive a measure of management that is but little more constructive than that of private forest lands. It consists of protection from fire, and almost rudimentary provisions for keeping the lands productive after cutting. Degree of effectiveness of even these, varies with the policies of State land boards and their executive employees, the State foresters, who frequently change with changes in elective State administrators. There have been cases where protection of extensive tracts of State lands has been abandoned or carried out at an obviously inadequate standard.

State forest holdings, grants for schools and institutions, include some of the best forest lands. Through lien selection and exchange there has been considerable blocking up into tracts with administrative possibilities.

The existing statements of State forest policy are rendered visionary by lack of appreciation in actual management of resources as assets for permanent public welfare and by lack of directed wise use of the timber on any sustained yield basis, or of the other resources - forage, wildlife, watershed regulation, or recreation - for permanent maximum benefits. The motives are practically entirely for current revenue only - and the resources are handled with this aim uppermost. Losses from insects or disease are fatalistically accepted as unavoidable without any consideration for protection against them except insofar as the Federal Government might finance it. Denuded areas are not reforested. There is no stable policy for development as permanently managed properties.

### The Conditions - County Lands

The substantial acreage of county lands is constantly growing as timber lands are cut over. For these lands there is no attempt at management whatsoever; protection from fire and incidental development comes only through action of adjoining owners in their self-interest. They are virtually "no man's land." They might be, or obviously are, chiefly valuable in forest growth, yet frequently ill-advised attempts are made at cultivation. What forage they carry is usually overgrazed. Thrifty young growing stands are often injuriously hacked into in an effect to glean the last possible stick that may have commercial value.

Concern as to the future of these lands and the possibility of their permanent contribution to local public benefit through their sound management and use is becoming manifested in several places; and State legislation permits

transfer by the counties through donation or exchange to State or Federal control for permanent administration. This has been taken advantage of only in part; and one of the handicaps to further achievement is lack of continuity of policy by the counties.

A large part of the county forest lands stays in that ownership. County lands are really the least provided for of any class of forest lands in the territory.

### The Causes - State Lands

The conditions arise from two basic causes, the owners' objectives and the liquidation philosophy.

The objective of State ownership is to obtain the greatest current cash income possible - to harvest the crop, to exploit the resources with only the least possible outlay to keep the land from becoming devastated. This logically stems from the fact that the State lands were granted for the support of the institutions to be converted into cash as quickly as possible for the benefit of the institutions and not as a land property to be permanently managed for general public welfare.

The traditional liquidation philosophy is so ingrained among the citizens and their representatives and officers that any efforts in a counter direction are more of form than of substantial substance undertaken with will and determination.

The States' forest land policy has, in practice, no strong fibre of long-time public welfare in spite of expressed statements to that effect. Its position is wholly that of a land owner, not that of an agency devoted to general public good through exemplifying and encouraging sound forest land management. Even the States' slash disposal requirements are more for reduction of hazard to nearby commercial timber stands than for the protection of the cut-over lands themselves.

### The Causes - County Lands

County lands are generally scattered parcels acquired through foreclosure consequent to tax delinquency. Characteristically, though not in all cases, they have insufficient value to warrant continuance in private ownership. They are mainly cut-over or burned-over forest lands, but in substantial part submarginal farm lands originally forested and properly classifiable as chiefly valuable in forest growth.

Tax loss preceded foreclosure, and tax loss continues so long as the land remains in county ownership. The usual aim of county officials is to return the lands to the tax rolls, and otherwise obtain immediate cash returns preferably

through sale; but this customary process applied to real property in general is far from successful since these lands, with very few exceptions, have no attraction whatsoever to private ownership. The counties cannot afford to carry the load of protection over permanent long-time management of these lands.

### The Needs

The primary need is the awakening of public consciousness out of the stupor of the liquidation philosophy.

The States must recognize and accept the responsibility of management for general public welfare and develop and effectuate a definite permanent policy and program. They must actively participate in actual management through full cooperation with intermingled owners or else block up their lands into units practical of full management by the States. Where, despite all cooperation renderable to the State, it cannot perform the task, State lands ought to be turned over to the United States for administration.

The county lands must be classified for use, and those determined chiefly valuable in forest growth zoned into permanent units of management. It is doubtful if any county can afford the needed management, hence the county lands need to be transferred and blocked up into public hands or to private owners committed to proper handling. Definite permanent policies and procedures must be established by the counties to this end.



## THE PROBLEMS INHERENT IN FARM-FOREST LANDS

### The Conditions

Farm forest lands are of two classes. In eastern Montana and limited areas in northern Idaho and eastern Washington, windbreaks, shelterbelts, and planted woodlots are a part of farm economy and improve living conditions. Elsewhere in the forest zone the natural woodlot is a part of nearly all farms, although generally there has been very little recognition of them as a part of farm management.

Extension in farm programs has existed for 25 years. Federal encouragement has been given to extension forestry and farm planting for 15 years. Section 4 of the Clarke-McNary Act of 1926 authorizes (but does not appropriate) \$100,000 annually for production and distribution of planting stock to farmers, in cooperation with the State which must bear half the cost of the program; and the full authorized appropriation has been made for several years. Section 5 of the Clarke-McNary Act authorizes a similar amount for extension forestry on farms; but the annual appropriation has been held to less than \$57,000. The Cooperative Farm Forestry Act of 1937 supplements both sections 4 and 5, and permits an enlarged program, but this is still on an insufficient scale to meet demands.

Idaho established the position of extension forester for the section 5 Clarke-McNary Act project when that was undertaken. In practice, he works in cooperation with the county agents to bring forestry to the farm, but the county agent is too busy with other activities to give forestry much place in his efforts. Montana has no extension forester in this project; the extension horticulturist functions in this capacity, but it is only a minor part of his job.

In such widespread States, with a distribution of 150,000 to 200,000 trees a year, there can be but very little supervision and follow-up on planting methods and advice in woodlot management by only one extension forester, and still less when he is only part time on the job. Furthermore the set-up has made for centralization, whereas farm forestry extension work ought to be close to the ground.

Whenever farm prices are good the demand for farm planting stock is high. Further demand has been created by soil conservation farm plans. Already the demand is far greater than the Clarke-McNary nurseries can produce; in 1940 many orders could not be filled.

In the treeless farm country there is ample warrant for still more farm planting to prevent wind and water erosion and make farms more livable, and to provide woodlots for wood products on the farm as is already done in parts of southern Idaho where home-grown fenceposts satisfactorily replace purchases from distant points.

Extension work in farm forest management in natural woodlots in the timbered zone has been negligible. There have been only a very few demonstration projects showing the farm owner the possibilities of himself producing his own wood needs permanently and growing material for sale.

### Needs

Enlargement of existing plans to make possible the extension of activities to many many more farms than at present. Provided must be closer-to-the-ground supervision, to adequate degree. Probably four county foresters could do the job in northern Idaho, and a similar number in western Montana. These are a part of the national need for a full extension forester for each of 600 counties and in 25 counties one forester for each two or more. Wholehearted support is needed from the beneficiaries, the farmers, but the public too needs to be informed of how badly extension of forest practices is needed to conserve farm values to meet the actual current needs of farmers, and to render farm life in many localities more pleasant.

## PROBLEMS PRIMARILY INVOLVING THE NATIONAL FORESTS

Gross area within national forest boundaries in the northern Rocky Mountain region - approximately 26,800,000 acres, more than 23,100,000 acres Federally owned, the rest in State, county or private ownership.

The area is divided into 17 national forests averaging 1,500,000 acres each and subdivided into 108 ranger districts averaging 250,000 acres.

### The Lumber Industry and the National Forests

#### The Conditions

Four hundred large and small sawmills operate in this region. They provide employment for approximately 15,000 men. The annual output now averages about 900 million board feet. Only ten percent of this cut comes from the national forests.

Because of the "cut out and get out" policy followed in logging privately owned lands, many formerly flourishing lumbering communities are now left without substitute industries to sustain employment, and are on the downhill grade.

While some lumbering concerns are now developing improved methods of managing their timberlands, the present rate of annual cut will, within 15 to 20 years, inevitably result in further curtailment of the lumber industry. This period of low output will continue for another 20 years or more until young growth develops to commercial size.

The only dependable backlog is the yield from the national forests which is available only on the sustained yield basis. As other commercial timber supplies diminish, demands for national forest timber will therefor increase. Even today many small mills and some of the larger ones are entirely or partially dependent upon national forest timber.

There is an estimated 50 billion board feet of saw-log timber in the national forests. This figure includes accessible and inaccessible timber, inferior species from a market standpoint, and good commercial stands. Probably not more than 38 billion feet is good commercial timber.

#### Needs

The need is for forest development and pooling of timber supplies wherever possible together with research which will explore the possibilities for developing markets for inferior species. The objective should be to hold anticipated shut-downs to a minimum and establish the industry on as permanent a basis as is practical.

Forest development, in this instance, means additional roads to make timber accessible as needed and permit improved silvicultural practices.

Pooling of timber holdings will require legislative authority to make THE PROGRAM effective. This is discussed in the section dealing with the remedies for private land problems. It will be applicable to localities where timber supplies can be reserved for cutting by operations which warrant permanence. The purpose is to hold the annual cutting rate to a uniform average in keeping with the annual growth, thus maintaining an industry permanently. This objective can be accomplished by blocking up into one ownership or preferably by cooperative cutting agreements among the owners.

The plan offers a partial solution to the problem of sustained employment. In some places it will mean reduction of current operations, but in the long run lumber operators will have a more dependable, even though smaller business. It offers immeasurable returns in stable employment, better homes, better schools, permanent security.

### The Problem of Nonreproducing Lands in the National Forests

#### The Conditions

Well over 1,000,000 acres of national forest land in the northern Rocky Mountain region are now badly if not wholly denuded of tree growth as the result of repeated fires. This acreage includes areas of high potential timber productiveness, and areas not capable of producing commercial timber but valuable for watershed protection and recreation.

Thirty years' observation indicates that years - in some cases centuries - will be required for these lands to be reforested naturally. Almost all of the commercial timber-producing acreage is either so encumbered with down timber and snags that planting is not practicable or else is not yet sufficiently accessible by road to enable planting within reasonably acceptable costs. On a very substantial portion, too, fire-ravaged soil conditions added to naturally critical climate render successful reforestation physically impossible; recovery will take nature a long time.

Of the total, only 300,000 acres are favored with suitable soil plus climatic conditions. Of this about 50,000 acres are now physically plantable. The remaining 250,000 acres are too inaccessible, or have too much down timber on the single burns, and too much fire-aftergrowth brush especially on the repeated burns.

Current planting capacity is 6,000 acres yearly; this is based on nursery capacity of 5,000,000 trees annually. Decreased appropriations and diminished CCC facilities

have brought this down from about 12,000 acres a few years ago. This capacity will plant the 50,000 acres now physically plantable, in the next 8 or 10 years. Were it made practicable to plant the 250,000 acres the present capacity would require 50 years to do the job. Since planting stock must be started several years ahead of planting operations, indefiniteness of probable planting means for ensuing years is a very distinct handicap.

### Needs

Increase in nursery capacity to 10,000,000 to 15,000,000 trees annually; road construction to make good sites accessible; hazard reduction and brush removal work on the good sites; adequate provision for planting surveys just ahead of proposed planting operations; stabilization of planting capacity so that sound plans for the operations can be made a needed time in advance.

## The Fire Problem in the National Forests

### The Conditions

The general situation is well known and need not be here summarized. A few points, only, need emphasis:

### The fire protection job is more difficult than in past decades

1. Weather records show that this area is in a drouth cycle of increasing precipitation deficiency.
2. New record in high temperatures are established almost annually - forest fuels thereby get drier each year. The long trend of average summer temperatures is definitely upward.
3. The large fires of former years killed millions of acres of timber. These are now dead, dry, and make kindling for new fires.
4. Insect infestations brought about by drouth conditions have killed great bodies of timber. These become tinder dry, and threaten to carry any fire into virgin timberlands.
5. Due to climatological phenomena, not yet understood by weather experts, lightning has become more and more frequent during recent years.

### Other forest activities essential to national economy suffer as a direct result of inadequate fire organization

1. The under-manned condition of the fire control

organization requires that all forest officers and employees normally assigned to other activities must be frequently drafted into fire work during much of the field season. This results in inadequate care of rangeland, timber operations, etc.

- a. Stockmen, through taxes, pay for and rightfully expect proper administration and development of forest rangeland.
  - b. Timber operators, sawmills, etc., demand that the timber sale business and silvicultural phases of forestry be well managed. They pay for it.
  - c. Mining interests, recreationists, hunters, fishermen, and all other forest users, expect and are entitled to attention to that phase of forest management in which they are interested.
2. Each of the above phases of forest administration is important from the standpoint of national economy. Each is penalized in that men trained and employed to manage these to the best public interest, must be called away during a large portion of the summer season on fire duty.

### Needs

In general the needs are commonly known and accepted. But some of the requirements have not been crystallized and recorded in any orderly way and hence merit discussion.

To continue to "get" 95 percent of fires while small, and increase that figure for economy in costs and reduction of damage:

1. Put "first line" organization on career basis - of the 1,200-1,400 men seasonably engaged, current turn-over is 44 percent because job does not provide annual living wage. New men - no matter how qualified otherwise - lack experience and even with "training schools" cannot be adequately trained each season. Especially true of dispatchers and foremen.
2. Augment numbers of those regularly employed each season who are trained and experienced. The regular force of about 850 has to be added to during special "emergency" periods, when time to select them carefully and train them adequately is far short. These could properly be employed when not on fire duty, on hazard reduction, disease control, construction and maintenance of all classes of improvements, reforestation, stand improvement, etc.

3. Completion and maintenance of planned road, trail, communication systems, and airplane landing fields.
4. Continued fire control research.

### The Problem of Inaccessibility in the National Forests

#### The Conditions

National forest areas are relatively wild and undeveloped.

Present planned forest road system totals 12,154 miles. To date 6,032 miles built to acceptable standard; 2,065 miles built but below standard; and 4,055 miles to be built. Trails planned, 38,588 miles; built, 35,024 miles; needed, 3,555 miles.

Maintenance costs now \$220,000 for roads and \$155,000 for trails annually.

Provisions are inadequate. Lack of roads impedes fire control, prevents full wise utilization of products and services from national forest lands.

Airplane landing fields contribute greatly to fire control. Some 30 fields are now available, most of these inadequate to accommodate modern planes.

#### Needs

As an economically attainable goal, the road system should be completed in ten years, the trail system in two years, and all necessary maintenance performed to keep these improvements up to a serviceable condition. As rapidly as possible the landing field program should be completed. Of all these tasks the CCC camps can do but little, and now that little is constantly decreasing as financial provisions for them are being reduced.

### The Problem of Range Administration in the National Forests

#### The Conditions

In round numbers 500,000 sheep and 100,000 cattle and horses graze northern Rocky Mountain region national forest ranges each season. The number of permittees (farmers and ranchers) averages about 2,000. Stockmen using national forest range have an estimated \$50,000,000 invested in land, livestock, and improvements. National forest grazing supplements the use of privately owned or leased ranges. Without it the users would have to make costly adjustments in management plans and numbers of stock and many of them would have to go out of business.

Permittees pay annual rentals, graduated from year to year as market prices for livestock fluctuate. They observe good range management practices as established by the Forest Service to keep the land productive and protect the soil. On many forests, advisory boards representing permittees' associations, work out grazing policies and allotments with forest officers. Consideration is given to stabilizing the livestock industry and protecting established ranchers.

An important fact not clearly understood, especially by many wildlife devotees, is that if these ranges now allotted to grazing by domestic stock were not used for that purpose, they would not produce their highest returns.

### Needs

Range improvements are needed to permit full use of the range with maximum stocking consistent with keeping the lands productive. These improvements include drift fences, stock water developments, stock driveways, bridges, and similar developments. Increased personnel is needed to meet the administrative responsibilities of developing management plans, salting plans, checking stock distribution, inspections, issuing permits, and similar detailed management activities.

Another need is public understanding of the relationship between use of the range by domestic stock and wildlife. Except in a few limited areas, even if all livestock were removed from the range, this would not solve the big game problem. There is a superabundance of summer range for game. The big problem is to find winter range for present big-game populations. Civilization has moved into the former home of the elk and deer and other big game animals. Wildlife is now forced to live in the foothills and higher elevations of the mountains. Deep snows restrict the winter feeding areas, and the only practical solution is to keep the numbers of animals in balance with the available winter feed supplies. These problems must be worked out on an area basis and a general policy of removing all domestic stock from the national forests will not meet the problem. In areas where there is a definite conflict, grazing by domestic stock is gradually being discontinued.

## The Wildlife Problem in the National Forests

### The Conditions

Two-thirds of the area in national forests in this region is not suitable for grazing domestic stock. Much of this area is a home for wildlife. Numbers of animals have been increasing and, in fact, nowhere in the United States is there a greater variety or number of wild animals.

The Forest Service does not desire to manage wildlife. This is a State responsibility. Fundamentally, the responsibility of the Forest Service is as a land manager. Custodianship of forest lands by the Forest Service does, however, imply and necessitate:

1. Management of the environmental factors affecting fish and game, and
2. Service to hunters, fishermen and others, and regulation of their conduct in any matter affecting wildlife environmental factors.

As a part of its cooperative program, the Forest Service conducts game checking stations, distributes salt for big game, assists in game law enforcement, and conducts wildlife studies and similar activities that are a part of good game management.

Management of the waters of the region to maintain fishlife is part of the wildlife picture. The national forests of the region have 32,000 miles of fishing streams, countless lakes and beaver ponds where fish should thrive. The Forest Service cooperates with the States in fish planting, stream improvements, and stream studies, but here again considers "fish management" to be a State responsibility.

#### Needs

1. Primarily the public understanding and recognition that wildlife and fish management must be based upon sound and scientific as well as practical knowledge.
2. Recognition by the public of the Forest Service responsibilities involved in the custodianship of national forest land as consisting of:
  - a. Management of the environmental factors affecting fish and game and regulation of these factors to restore or perpetuate reasonable soil productivity.
  - b. Service to hunters, fishermen, and others, and regulation of their conduct in any matter affecting wildlife environmental factors.
3. Inventories and studies of game and fur-bearing animals, upland birds, and game fish and their habits, their diseases and the conditions under which they must live.
4. Intensified cooperation with State and other Federal agencies in all the related activities - inventories, studies, and action.

# The Problem of Destructive Insects and Tree Diseases in the National Forests

## The Conditions

National forest lands are constantly menaced by possible outbreaks of insects or diseases. The blister rust situation is an example of what occurs when an outbreak of disease becomes epidemic. Destruction of large areas of lodgepole pine on the Bitterroot, Beaverhead, and other forests by mountain pine beetle are an example of widespread insect damage. These pests not only destroy valuable timber stands and watershed values, but dead trees increase the fire hazard while fallen snags reduce grazing use of forest ranges.

## Needs

Periodic inspections to discover outbreaks when they first threaten, and essentially control measures before they become widespread.

(The subject is further discussed under "Cooperative Insect and Disease Protection" as it is more properly a cooperative undertaking.)

## The Watershed Problem

### The Conditions

Without protected watersheds, civilization as now constituted would be practically impossible in this region. All of the national forest lands are valuable watersheds. This region is the source of two of the Nation's largest drainage basins - the Missouri and the Columbia. It contains the "Little Waters" that go to make up these mighty rivers around which much of western civilization is built. Of the variation in effectiveness on waterflows of different kinds of cover not much is known.

### Needs

Maintaining a vegetative cover is essential to maintaining a flow of water for domestic use, irrigation and power, and to ameliorate flood damage. Without protected watersheds the country would be subject to flashy floods, excessive erosion, and dry streambeds.

But this is not enough. Upstream developments - mechanical dams, beaver dams, reservoirs for holding back the early run-off so as to maintain as high a streamflow as possible during the late summer and early fall are an essential part of any well rounded program of water conservation.

Necessary are: Studies of the influence of various types of forest cover on run-off; more complete coverage by stream measurements and surveys of the possibilities for upstream development, and a construction program based upon such surveys; to the extent found warranted, reforestation, transplanting of beaver, especial fire control, and closer control of grazing use. Constructive work and development, of course, to be geared to local and general needs for flood protection, or for more constant and controlled water flows.

## The Problem of Forest Recreation in the National Forests

### The Conditions

The local population tributary to the national forests of this region is about 1,000,000. These are all potential and largely actual recreation users. To these must be added thousands who increasingly come from other States. Practically all States are represented in national forest visitors.

The annual camper and picnicker use at present is about 500,000 visits. Conservative estimates place the present daily use on Sundays and holidays by picnickers and campers at 20,000. Year by year the use is increasing and all indications are for still greater future use.

There are only 70 sites with a capacity of 4,700 that are developed sufficiently to provide needed recreation facilities, protect public health, and protect the areas from damage through overuse or unguided use. Development plans have been completed for 50 additional sites with a daily capacity of 2,000. Approximately 130 other camp or picnic sites were once provided with a few simple, temporary facilities, but these are now practically worn out.

Some 15 winter sports areas have been developed on national forest lands, including 7 without any Forest Service assistance. None of the areas is adequately developed, or even fully planned. A number of additional well developed areas are needed. Estimates place the present number of visits by winter sports users at 65,000 for this region, and substantial increases are expected year by year.

Two Government-developed forest summer camps for low-income groups have been developed - the Lions Camp near Red Lodge and the Paxson Camp on Seeley Lake. This kind of development has vast potentialities for rendering service through enabling low-cost organized vacations for those with low income. These two projects are only beginning to fill the needs. But there is yet no established program of this class; the two projects were possible only through a fortunate combination of unexpected circumstances.

Public enjoyment of the recreational attractions of the national forests is facilitated also by privately owned and managed resorts and similar services mostly under special-use permit. On national forest lands such undertakings, now about 30 in number in the northern Rocky Mountain region, are coordinated with other recreational, and others of the multiple uses.

All these developments are directed and controlled to insure greatest convenience, satisfaction, attractiveness, and economy to the using public. This means recreation use planning and landscape architectural designing.

Increasing numbers enter the forests for horseback riding, automobile touring, and hiking.

The volume of public recreational use in all forms has practically doubled in the last five years, and mounting increases will continue. This use is encouraged even though the administration load is greatly increased as a result, since the potential health, pleasure, inspirational, and cultural development of the people from forest recreation is tremendous, and since recreation is fully recognized as one of principal multiple uses of the national forests.

Demands are far in excess of present facilities, and are increasing. Maintenance of existing developments is lagging and the necessary stewardship is available only to the very limited extent attainable at sacrifice to other pressing activities by an already overloaded personnel. The essential planning for development is just barely a "jump ahead" of whatever development is possible. Direction and management of public recreation are inadequate to assure the warranted degree of attention for public benefit.

### Needs

Speeded preparation of advance plans and landscape architectural design. Increased capacity of camp and picnic grounds to three times present. Substantial increases in winter sports areas and organization camps. Adequate maintenance and "care-taking" of camp grounds and other recreation areas. Augmented management and supervision of the recreation resources and recreation use.

## THE PROBLEM OF PUBLIC DOMAIN FOREST LANDS

### The Conditions

In the northern Rocky Mountain territory remain substantial acreages of public domain of chief value in forest growth. These are remainders of the original much larger acreage of public domain which have not attracted entry or appropriation under any of the various land laws since of no agricultural, mining, or other special value, or containing no timber of commercial size, species, and accessibility.

Much of these lands have distinct public values for watershed protection, recreation, as a home for wildlife, for use of the range intermingled with the timber growth, or with growing young timber for future timber products.

Until recent years protection has been rather sketchy. In charge of the Department of Interior, protection against trespass has recently been intensified. Special appropriations to the Department of Agriculture have provided a contribution toward fire control.

But, no definite provisions exist for integrating the use of these lands and their products with other public or private lands to have them contribute their possibilities to current and permanent future public benefit. Administration to this end as comprehensive as provided for national forest lands is lacking.

### Needs

Classification for use, and incorporation of such as are of chief value for general forestry purposes with nearby or adjoining national forest lands in the northern Rocky Mountain region.



## THE PROBLEM OF DIVERSE OWNERSHIP OF FOREST LANDS

To appreciate the situation fully, ownership and its effect must be considered.

Federal ownership includes the majority of the lands within the national forests, which are generally fairly well blocked up, scattered or isolated tracts of the public domain, and forest lands reserved for specific purposes. In addition, there are the forest lands on Indian reservations, managed for the benefit of the Indians.

State ownership includes the unsold remainders of a number of special institutional grants. Preeminent are sections 16 and 36 in each township granted as a source of revenue to support the common schools. Through exchanges, State lands have been partially blocked up but they are principally widely scattered.

County ownership includes scattered logged-off or otherwise low-value timberlands, together with submarginal farm lands, which have reverted to the counties through tax delinquency.

Other large holdings are in corporate ownership - many of them fairly well blocked to the degree necessary for fairly economical logging. Among these are the unsold remainder of the original grants to the Northern Pacific Railroad which included alternate sections for distances ranging from 40 up to 60 miles on either side of its right-of-way.

Private ownership also includes numerous small tracts held by individuals as well as larger tracts of varying size held by individuals, estates, companies, etc.

These lands are on the whole not blocked out for administration or permanent-use purposes. Ownership did not develop in that manner. Within national forest boundaries, Federally owned land is intermingled with other ownerships. The ownership in any large area is represented by all groups.

Through exchanges, acquisitions, purchases, tax deeds, homestead entries, filing of mining claims or other means of acquiring title to lands, ownership is constantly changing.

This intermingling of ownership adds to administration and protection difficulties and to the problem of putting the lands to their highest beneficial use. It usually makes the continuity of any management policy very difficult if not impossible.

Imagine a stockman operating a 50,000-acre ranch in Montana's foothill country with other diverse interests

owning intermingled tracts of irrigated meadow, range lands, and good or poor timber stands. His difficulties in operating this property simply as a stock ranch can be easily visualized. But if in addition he attempts to satisfy the demands of recreationists, hunters, fishermen, and wood haulers in the use of the property, meanwhile trying to establish a small sawmill operation on some kind of a permanent basis, and having to compromise his needs for water with those of the local community, his situation becomes practically intolerable.

Yet a comparable situation exists over a gross area of more than 30 million acres in the northern Rocky Mountain territory. It illustrates the complications arising out of intermingled ownership.

### Need

The facilitating of blocking up acquisitions by Federal and State governments, the assistance to private owners in similar blocking up, and the encouragement of cooperatives among all owners pooling their properties for unified stable management, are essentials to dispose of the checkered ownership handicaps.

## THE GENERAL FOREST INSECT AND DISEASE PROBLEM

Forest insect and disease epidemics are widespread over the Nation and in this territory.

### Insects

An outstanding example is the western pine beetle in Washington and Oregon, which, in 1931 to 1935, killed nearly as much ponderosa pine as was cut. In the northern Rocky Mountain territory the mountain pine beetle, in the past decade, destroyed the lodgepole pine of merchantable size over millions of acres in Idaho and western and central Montana. A constant toll has been and is still being taken from the merchantable white pine by the mountain pine beetle.

Insects are no respectors of property lines, and individual landowners are powerless to control them; cooperative action is required. An organization is needed capable to maintain close observations on incipient epidemics, make necessary plans for control, and administer control operations.

### White Pine Blister Rust

The blister rust epidemic threatens all of the white pine throughout the country. If not controlled, it threatens the existence of the great white pine industry of the Inland Empire, the sugar pine industry in California, and the white pine of the Lake States and New England. The situation and the importance of white pine are presented in the pamphlet "The War on White Pine Blister Rust in the Inland Empire." In this territory, the 2,670,000 acres within the blister control units can have a producing capacity of more than 300 million board feet of white pine yearly, with a value as lumber of \$10,000,000, but only if blister rust is held in check.

Blister rust can be controlled only by eradication of current bushes in the white pine forest on which the disease breeds and spreads to the pine. Where this has been done the spread of the disease has been controlled with a reasonable expenditure of funds.

Past blister rust control work has been inadequate and the disease is spreading faster than control measures. Much white pine will be lost if the program is not expedited.

The need for blister rust control is for "men - money - determination" to win the fight. Sufficient funds for an expanded campaign to get ahead of the disease is needed to stop the present spread. Control thereafter is possible at nominal cost compared to the costs of checking the disease in the first workings. A determined effort at this time will save money in the long run.



## RECOMMENDED REMEDIES

### AND PROGRAM

It is to be emphasized that there is no one remedy that alone implements the meeting of any individual problem; several or more of the remedies have to be applied. On the other hand, no individual remedy is applicable to only one of the problems; every remedy when applied will contribute to meeting several, or most, if not all of the problems.

It is to be noted also that these remedies are those recommended by the Forest Service; it is entirely up to the people, even wanting to do something about the situation and its problems to decide whether the remedy will be applied, or perhaps other remedies, or perhaps no remedies at all if in the people's view, "the cure is less desirable than the disease."



## RECOMMENDED REMEDIES APPLICABLE TO PRIVATE LANDS

The Forest Service recommended to the Joint Congressional Committee on Forestry two main classes of remedies applicable to privately owned forest lands and both to be applied concurrently.

The first is public cooperation in many forms coupled with public regulation to insure private cooperation.

The second is public acquisition - community, State, and Federal which is to be resorted to for lands of private owners who cannot or will not carry on even with public cooperation.

In addition, expanded research recommended would contribute to solving the problems affecting all forest lands.



## COOPERATION INCLUDING REGULATION

The various elements, all of which are applicable in part at least to all sections of the country, are elsewhere listed, elaborated, and discussed from a national viewpoint.

In the northern Rocky Mountain territory the conditions give greater importance to some of these elements than others, and some of them are of no practical weight at all. Those considered applicable in this territory are:

- Public Regulation
- Cooperative Forest Extension
- Utilization Extension
- Cooperative Fire Protection
- Cooperative Insect & Disease Control
- Cooperative Forest Credits
- Cooperative Sustained Yield Units
- Cooperative Forest Planting

These are individually discussed in the following pages.

### PUBLIC REGULATION

#### The General Proposal

Contemplated are requirements sufficient to stop destruction and deterioration of the forest and keep the land reasonably productive. These requirement would:

1. Insure the leaving of seed trees of desirable species needed to reforest the land, together with requirements that will prevent the unnecessary destruction of reproduction and immature young growth.
2. Insure safeguarded use and control of fire, including preventive measures.
3. Prevent clean cutting and deforestation without positive assurance of natural restocking or, if need be, planting.
4. Prevent excessive grazing on critical run-off, erosion, and forest production areas.
5. Prevent the use of the more destructive logging methods and equipment.
6. Insure any other simple silvicultural measures needed to keep lands reasonably productive, insure reasonable watershed protection, help to safeguard local communities, and furnish necessary supplies of timber for local and national use, including the national defense.

These requirements would be localized and adapted to the peculiar situations in which they are to be used. The different individual ones have each greater or less weight in the northern Rocky Mountain territory.

To insure flexibility there would be provisions for approval of cutting and related practices prescribed in plans for individual holdings and optional with owners. Owners would be authorized to prepare the plans themselves, but the practices called for could not acceptably fall below the general level already indicated.

States would be given an opportunity to exercise this control through adequate State laws adequately enforced, with financial assistance from the Federal Government and in accordance with approved standards, but the Federal Government would take over the control wherever a State cannot or will not exercise it.

In this territory the minimum effort that will insure leaving a cut-over area in productive condition and safeguard immature trees and second growth from injury as the result of logging practices can be put forth with but little additional cost.

Some stands lend themselves admirably to a cutting system that will remove the profitable volume and leave the residual stand in excellent condition for a second profitable cut in the very near future. Other types have an excellent stand of advance growth and reproduction that if left uninjured by logging or slash disposal, will provide a well-stocked stand in the future.

In the mixed coniferous stands of this territory where only one or two of the timber species are removed in logging, the residual stand is frequently sound and thrifty, and if protected from injury will provide a second crop when, as is expected before many decades, a market demand develops for the species. In most of the cases, the stand of sawlog trees thus left or advance growth pole size unprofitable for conversion can be left without any additional cost to the logger. In fact, in many cases the cost of logging and milling the smaller sized trees of even the most desirable species exceeds the selling value of the products.

Many of the immature trees and much of the young growth can be saved during logging if care is taken in the falling of trees, in swamping, in the location of roads and main skidding trails, and in confining the drivers of heavy logging equipment to the use of main skidding trails and back-trip trails. Such practices increase the cost of logging only slightly, if at all. The merchantable stands are not such as to favor the more destructive methods of logging like high-line skidding, which are so destructive in other localities.

The protection of the forest stand from fire during and immediately following logging is among the more difficult and costly measures that must be accomplished if the lands are to be kept in a productive condition. The chances of fires starting during a logging operation are relatively high. The camps must be organized systematically for fire prevention and suppression. Modern logging conditions require many special precautions to insure that fires do not start.

In the northern Rocky Mountain territory the disposal of the slash created by logging is essential to reduce the fire hazard in cut-over stands and in uncut mature timber and young growth nearby. It is by far the most costly and the most difficult of the necessary measures. The main objective is to dispose of sufficient slash to bring the fire hazard back to normal, and at the same time protect as many of the immature trees and second growth on the areas as possible during the burning operation.

The aim of keeping forest lands in a productive condition is attained by (1) adequate protection of cut-over and young growth areas as well as merchantable timber stands; (2) leaving uninjured, and in good growing condition on cutting areas sufficient seed trees and/or immature trees and second growth of desirable species; (3) saving as many of the immature trees and young growth as possible during and immediately following logging; and (4) proper and safe disposal of the slash resulting from logging.

In this territory there is very little risk of injury through excessive grazing on forest lands. There is occasional overgrazing on recently cut-over land which is injurious. The main effect is to retard the reestablishment of new growth; usually, in time, the young trees crowd out the range plants.

It is too late in northern Idaho and northeastern Washington to sustain the present sized industry, since the timber resource is too far gone. What still can and should be done is to build up the timber resource for a permanent though probably less large forest industry in the future. In western Montana there is still a chance to develop a sustained yield management plan on the basis of the present mill set-up.

There are being cut over annually in the Inland Empire about 55,000 acres of commercial saw timber stands on private lands. It will be these areas, together with the 4,775,000 acres of commercial pole-sized stands and the 4,118,000 acres of commercial seedling and sapling stands that, if properly cut, protected, and managed, will provide the timber resource for the future. Improper cutting and loss from injury and fire during and immediately following logging will throw the 55,000 acres each year into the already large 1,711,000 acres of commercial forest land

at present nonrestocked and which, unless rehabilitated at a heavy cost to the public, will remain unproductive or poorly productive for many years to come.

### Existing Regulation

Regulation is by no means a new step in the territory. Already in effect are several State regulatory laws applying to forest lands. Forest landowners are required to protect directly or to cooperate with other owners in protecting their lands from fire. Also required is the disposal of slash left from logging operations, and restrictions exist for limiting the period of the year when such fires may be set.

In Idaho it is legally required to leave seed trees and/or immature trees and young growth to insure that the cut-over stands are left in a productive condition, or to protect the residual stand from injury during the logging operation.

But there are limitations to all these laws which hamper their effectiveness. In Montana, the maximum cost of required fire protection is limited to five cents per acre per year, which is considered sufficient. A similar limit in the Washington law, however, prevents protection effort from being intensive enough in high-hazard stands. The required protection effort in Idaho is considered reasonably effective. In general, private forest lands in the region are reasonably protected, wherever private owners have enough commercial timber values at stake to impel them to establish protective organizations under the provisions of the State laws. But, as will later be shown in the discussion under "Cooperative Fire Protection" there are extensive areas where protection is either sadly inadequate or lacking entirely.

It is lack of adequate disposal of slash after logging that is the one outstanding factor responsible for cut-over private lands being left in unsatisfactory condition to produce new timber crops. Many stands cut over satisfactorily are ruined when the slash is disposed of. Particularly is this true in Washington, where piling of slash - which frequently is necessary - is not required and hence logged-off areas are broadcast burned.

The Idaho law permits requirement of piling and burning - it is adequate - but it is not wisely and strictly enforced, and consequently in many places the aim of keeping land productive is not met. The Montana law limits required slash disposal costs by an operator or owner to 15 cents per M feet of timber cut. In most of the timber types in western Montana this is far inadequate.

Assurance that lands cut over are left in safe condition for production of new stands requires improved compulsory slash disposal laws and much better applied enforcement.

The Idaho law requiring leaving of seed trees, etc., as above mentioned, is not enforced at all. Under the defunct NRA Code the large private owners as members of the Western Pine Association set up a forest practice code, which, if strictly adhered to, would have kept the lands in a productive condition. A number of the operators followed the code and during the years it was in effect, left their cut-over lands in a very satisfactory condition.

Even today, without adherence to this code, or to the Idaho law, cutting practices on the private lands of most of the larger operations are fairly satisfactory. With some notable exceptions a fairly large acreage, due to the type of stand and the species, and in some instances a selection system of cutting, will be left productive within the region without any enforced cutting regulations. The loss of immature trees and young growth during logging is not unduly high. In large part this is due to the fact that the methods and equipment generally used in this region are, with care, not particularly destructive. The notable exceptions occur as the result of unwarranted carelessness and shortsighted misjudgment by operators of their own interests.

#### Probable Character of Regulation in the Northern Rocky Mountain Territory

Specific regulatory requirements will be evolved by local boards (subject to approval of their conclusions by State and Federal administrators). It is impossible to state now just what the requirements will be. It can only be indicated in a general way about what is anticipated they may provide. Even those who have given most study to this matter have not come to definite conclusions and are not in full agreement among themselves.

However, the general characteristics of probable regulation will be an indicative guide.

They will likely resemble somewhat the requirements of the "Code" agreements of several years ago, probably broadened and strengthened in some aspects. They will likely aim at desirable slash disposal practices, at desirable methods of cutting, at protection of young growth, and desirable residual trees during logging operations, and at protection from fire during the logging operations. General operating conditions and practices already common in the territory betoken that the requirements will demand not much more, and in some aspects practically no more than is now required and practiced. An outstanding exception

might be that more care will be demanded in the practices of slash disposal to bring them into closer conformance with current requirements which are generally agreed to be sound.

In the cutting of mature timber stands the aim would properly appear to have reasonable assurance of reproduction and persistence of the most valuable pines to avoid degradation of the stand taking advantage of existing advance growth. In the cutting of immature stands the aim will probably be to make thinnings which would leave a reasonably well distributed stocking of thrifty desirable trees for further growth.

In slash disposal the general aim would undoubtedly be a reasonable expenditure toward removal of the slash hazard to protect good tree growth and ecological conditions remaining on the cut-over and nearby areas.

Ordinary care and thoughtfulness, at very little if any added logging expense, in applying present logging methods and practices, to save existing good advance growth and residual trees will probably be deemed sufficient.

The customary practices in fire protection in logging operations, seriously applied, will likely be satisfactory.

#### Degree of Importance of Regulation in the Northern Rocky Mountain Territory

While all signs indicate that in this territory public ownership is the major ultimate solution of the forest land problems, yet it is not to be expected that it can be immediately applied to all private land. And, during the transition period it is of high importance that the private forest lands, whose timber is in the process of liquidation, should be so cut and handled that they do not become greatly depreciated before they come into public ownership. In some places in the region, too, a measure of private ownership will continue and be satisfactory.

Accordingly, even in this territory regulation has an especially important place in THE PROGRAM, and it is essential that the principle be accepted as one of the major measures.\*

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\*For the necessary full understanding of the regulation recommendation every student of these pages must become familiar with all the other mimeographed material on the subject such as pages 35 to 40 et al of "Questions and Answers," and pages 18 to 31 of the "Summary of Recommendations."

Nationally regulation has the greatest promise of any of the recommended items of THE PROGRAM for the attainment of the objectives. Consequently, in this territory as well as in all others, obtaining public support and demand for regulation is at least as urgent as any other of the other steps recommended.



## COOPERATIVE FOREST EXTENSION

Forest extension is concerned with education and demonstration of good principles of forestry in industrial forest land management, farm forest land management, and in this territory, State forest land management. Public thinking, insensible to anything but an economic pinch, is reflected in inaction in legislatures and the Congress toward adequate authorizations and appropriations for measures to guide in better forest practice now and to insure future forest crops. Public interest should be aroused. The attack on the problem should be directed at the heart - the liquidation philosophy of forest landowners and public acquiescence to it. For application of good forest practice under regulation and to aid in effectuation of sound management of State, county or private lands, or their transfer to permanent managing agencies, extension work is a necessary part of advance education.

### Industrial Forest Lands

Because, in general, industrial operators will apparently never adopt measures of permanent forest practice other than limited leaving forest land productive after logging, education and demonstration must be directed to them, backed by public demand for long-time operations in the interest of communities.

Extension in industrial forestry is primarily a Federal function, since no other public agency will undertake it seriously. Extension work has been carried on by the Forest Service (Experiment Station, State and Private Forestry, and Timber Management) on a limited scale, with some assistance in studies only, by industrial owners.

So far there is no general application of principles by private owners. Success of extension and demonstration in northern Idaho will come too late to attain stability of operations since depletion has progressed so far. But some beneficial results can accrue in a small but substantial way. In Montana there is still opportunity to stabilize many of the local communities, or to have at least an important part of their support continued indefinitely.

### State Forest Lands

Ordinarily the States take a substantial part in extension endeavors, but the States in the Northern Rocky Mountain territory are rather the objects for extension and demonstration.

Because both Montana and Idaho are relatively poor, partly developed States, their financial means are limited and other State needs have higher priority than forestry.

Their legislatures have so far recognized only one forest management need, fire protection, and the funds appropriated for even this are inadequate.

It may be many years before the States will act without Federal initiative. To effect extension of good forest land management practices the State forestry departments will need assistance in presenting management plans to State land boards and in requesting appropriations adequate to carry them out. They will also need help in actual management practice. Part of the extension educational work would be to create a public demand for career service and technical personnel in the State service, as well as attaining all important background of a public informed and aroused, regarding the needs for management on State forest lands.

### Farm Forest Lands

Extension in planting and of good forest management practices on farm forests through demonstration and education is a necessary task that can be done only by qualified men working close to the farmers. Farm forestry can, as at present, be carried on by the States in cooperation with the U. S. Extension Service or the U. S. Soil Conservation Service.

### Recommended Remedies in Forest Extension

For forest extension of all classes:

1. Assuming that the task will continue to be the responsibility of the Forest Service, at least for industrial, State and other publicly owned forest lands, the appropriation should be authorized and made at \$7,500 annually.

2. This means, concretely, at least the continued full amount of appropriations authorized under Clarke-McNary Act, section 4.

3. It means, at least, the full amount of appropriations authorized under the Clarke-McNary Act, section 5.

4. It means an appropriation to be matched with State funds, to provide for county extension foresters.

### To Meet the Needs for an Adequate Forestry Extension Job

1. For the Nation as a whole a complete county forester project would cost \$3,500,000 annually, divided equally between the Federal Government and the States.

2. For the extension task for industrial forestry the total appropriation should be \$750,000 annually. From this amount the allocation to the northern Rocky Mountain territory would be \$8,500. (Nothing is available here now - the only allocation to the Forest Service in this region being such amounts as \$1,500 for farm forestry extension in F.Y. 1940.)

3. Under section 4 and section 5 of the Clarke-McNary Act there should be the full appropriation annually of the authorization of \$100,000 each. There should be an additional appropriation of \$250,000 annually under the Cooperative Farm Forestry Act of 1937 for extension and demonstration on the ground. Of these amounts the northern Rocky Mountain territory would require \$4,100 under section 5, and \$4,100 under the Act of 1937.

To Meet the Needs for an Adequate Farm Planting Program

1. The authorization under section 4, Clarke-McNary law should be increased from \$100,000 to \$500,000 and appropriation of this authorization made. The northern Rocky Mountain region States would then be encouraged to double their projects and meet the existing demand and might qualify for \$10,000 allotment of Federal funds.

2. The project work under the Cooperative Farm Forestry Act (Norris-Doxey Act) including the Prairie States Forestry Project requires an appropriation of \$1,500,000. Beyond the Prairie States Forestry Project cost the Soil Conservation Service and Forest Service will be enabled to extend operations in farm planting of windbreaks, shelterbelts, and woodlots in conjunction with Clarke-McNary section 4 work.



## UTILIZATION EXTENSION RECOMMENDED

### The Proposal

There are close to 75 billion feet log scale of commercially available sawtimber within the Inland Empire region. Based on the average annual cutting drain, this volume should sustain the present industry for at least 85 years; but of this volume only a portion is of a species and grade which can be handled at a profit. All of the mature and merchantable timber in any stand cannot be utilized under present market conditions, needs, and uses. To find a market for the billions now not usable and to find more and better uses for all of the species and grades is the purpose of forest products and utilization research. To disseminate the results of these investigations and have the findings put into practice is the purpose of utilization extension.

The basic cause for poor utilization, of course, is that only part of the timber in the stand can be handled at a profit.

The white pine, the ponderosa pine, and pole-sized cedar, can, as a rule, be handled profitably, but other timber is in low regard. This favoring comes about partly because of the technical qualities of the wood and partly because of established trade reputation. Species held in low regard (spruce, larch, Douglas-fir, etc.) often are as satisfactory as pine for many uses to which pine is put but lack consumer appeal.

Distance to markets is another cause of limited utilization. Only high-value lumber can be shipped profitably. Hence remanufactories are needed to take low-value material, and fabricate it into products which can be shipped to assured markets at a profit. The territory is now importing a number of finished products which could as well be made locally.

A utilization extensionist can help in showing how timber products can be improved, thus increasing demand for them. He can help architects and builders by advising in specifications. He can help the farmer on the one hand in marketing his woodlot timber - perhaps through cooperatives - and on the other hand, through wiser methods of handling and preparing the timber products he himself uses. He can help the larger operators in such matters as utilization in woods and sawmill, in kiln drying, in marketing practices.

He can explore such possibilities as the practicability of utilization of western larch in this territory through chemical conversion for mucic acid, for Venetian turpentine, for industrial alcohol. He can develop all possibilities latent in use for plywood and for pulp of the so-called inferior species. He can show to what extent remanufactured

goods can be profitably produced in the territory from the primary product - lumber - instead of shipping that raw material elsewhere for such fabrication.

More than three-fourths of the opportunity for increased employment in a sound forestry program depends upon the harvesting, manufacture, distribution, and utilization of timber. Improved markets are therefore an important part of effective program for social and stabilization and rehabilitation.

#### The Recommended Program

Provision for greatly expanded extension activities as part of the effort to increase markets for forest products. This should cover the entire field of utilization with the timberland owners, forest industries, and the consuming public. An organization of trained specialists will be required to translate the results of world-wide research into practical applications, convey them to those who should use them and furnish advice toward making applications effective.

In order to provide for this service additional legislation and appropriations are required.

## RECOMMENDED COOPERATIVE FIRE PROTECTION

The recommendations in THE PROGRAM reemphasize cooperative forest fire protection as one of a number of means toward assuring permanent good management of private (and State) forest lands, and include expansion of the Federal share of such cooperation. Specifically:

1. Increased Federal appropriations making available up to one-half of the total \$18,500,000 annually needed - or \$9,000,000. It is conceived that the Federal Government warrantably should increase its cooperative contribution up to one-half of this total cost, since the private owners and the States cannot bear a greater part of the total cost of adequate protection of all forest lands, including the vast proportion having immense present and future capacity for various of the multiple-use contributions to national and local welfare but not having immediate commercial values. A Federal contribution of one-half the cost would fully justify the Secretary requiring a higher standard of State performance.

2. Increased State recognition of its responsibilities. Besides adequate State appropriations and other informed legislative support, this means establishment of the State forestry personnel on a career service and merit basis, since it is now only by chance that strong State organizations are built up and political changes may "wreck the ship."

3. Increased annual appropriation for fire weather forecasting from \$67,500 to \$350,000 annually.



## RECOMMENDED PROGRAM FOR COOPERATIVE FOREST PLANTING

To help bring back to forest cover a vast acreage of forest land devastated by fire and/or destructive logging, and to expand shelterbelt plantings THE PROGRAM recommends expansion of Federal contributions.

Under the Clarke-McNary Act the Federal Government contributes \$100,000 to the States on a 50-50 basis toward forest-tree seed and planting stock for farmers at not more than cost. Forty States are now cooperating under THE PROGRAM, with a distribution of about 47 million seedlings annually. In this region the nursery at the University of Montana distributed in 1939, 331,000 trees, and the University of Idaho at Moscow, 159,000 trees.

THE PROGRAM recommendations are to increase this item from \$100,000 to \$500,000 and to amend the Clarke-McNary Act amended to include all private owners as well as farmers.

While this may be important in other regions for the reforestation of the millions of acres of denuded private lands, it will have insignificant application in the northern Rocky Mountain territory, since few owners will be induced to plant their lands. For devastated private lands there is only one answer in this territory - public acquisition.

The shelterbelt project in the Plains States has been precariously financed from emergency funds. THE PROGRAM recommends an appropriation of \$1,500,000 annually. The shelterbelt project has met with demonstrated success, and is enthusiastically supported by the farmers of that region.

### References

Green book - pages 159 and 281.

Forest Service Program Recommended at Joint Congressional Hearing - page 2, paragraph 6.



RECOMMENDED PROGRAM FOR COOPERATIVE  
INSECT AND DISEASE CONTROL

A far more liberal Federal participation in this task; stimulus to private and State action through cooperative contributions by the Federal Government.

In some localities - probably in the Inland Empire and the rest of the northern Rocky Mountain territory - private and State contributions would be nominal, so that if anything is done at all, the whole load would fall practically on the Federal Government. Encouragement by this means, to management of private forest lands on a permanent basis, would not be material, even with other of the cooperative recommendations made effective. The permanent solution would still remain public acquisition, and the ultimate carrying of the full load by the public, but in the meantime the Federal cooperative effort would safeguard the protected lands against long-lasting injury.

However, there is a field for such help to private forestry in other parts of the Nation. Recommendations are for a Federal appropriation, to be applied Nation-wide, of \$1,000,000 annually for surveys, constant watchful observations, and first-line defense on incipient epidemics with whatever additional emergency funds are necessary to take care of real epidemics that flare out-of-hand.

In this territory, an estimated 15 million dollars is needed during the next six years for white pine blister rust control on State and private lands.

The general policy of Federal cooperation in combating insects and diseases is well established in regard to enemies of farm crops such as the boll weevil, the Mediterranean fruit fly, the Dutch elm disease, the foot-and-mouth disease. Similar Federal cooperation and action are required and warranted for forest enemies.



## RECOMMENDED PROGRAM FOR COOPERATIVE FOREST CREDITS

### The Conditions - Reason Therefor

Much of the timber in private ownership is burdened with debts - term bonds, shorter time loans and borrowing for current operation cost, all at high interest rates.

All types of loans on timber have been made under customary banking terms, the design of which is conversion of stumpage, often capitalized at excessive values, into cash without regard for public interest in maintaining the work-making productivity of the underlying land.

Borrowers operating under such a system of financing (the only one available to them) in order to escape foreclosure, must cut, and at times oversell the market, without regard to sustained yield, to enable them to meet the high rate of interest required and amortization of principle.

Result: Sawmill capacity greatly exceeding available stumpage if cut on basis of sustained yield - cutting in excess of demand in times of depressed markets - too much competition - rapid exhaustion of choice old-growth timber - poor, or no forestry practice - depleted land - abandoned communities.

### Recommended Program of Correction

Federal legislation to make money available at low interest rates from Federal sources.

#### Means

1. Creation of a Forest Credit Bank in Farm Credit Administration.
2. Money to be loaned to timberland owners who agree to plans designed to provide sound forestry practice. Forest Service to pass on adequacy of the plans. Compliance of borrowers to be currently checked by the Forest Service.
3. Money to be loaned for from 5 to 30 years, and intermediate credits for 1 to 5 years, at interest rates and cost ranging from about  $4\frac{1}{2}$  to 5 percent. No loan to exceed 30 percent of the appraised value of the real estate, with provision of amortization which will not force liquidation.
4. Legislation should also provide a relatively small annual appropriation for administrative overhead in the Farm Credit Administration; a recoverable fund from the existing revolving fund of the Farm Credit Administration; an appropriation to purchase the initial stock in the proposed Forest Credit Bank; and to raise additional money as needed, by issuance and sale of interest-bearing bonds guaranteed by the Federal Government.

## Justification

Only the Federal Government in the field of lending agencies can recognize the long-time public benefit of such loans and carry on an institution that, pooling risks for the entire country, can provide credit service for an enterprise such as timber production for sustained yield form of operation. Use of soils for growing of timber crops is the only major form of land use not now provided with low-interest rate, long-time credit service.

Such form of credit service should contribute to arousing interest upon the part of timberland owners in replacing costly financial structures and distributing their cut of merchantable timber over long periods. It should encourage holding of best site class soils acquiring and protecting growing stock on such sites, consolidating holdings into sustained yield units, revamping harvesting and manufacturing facilities to harmonize with sustained yield requirements.

From such readjustment the public will benefit.

The extension of credit on the easier terms as recommended will unquestionably help to put the management of private forest lands on a more permanent basis.

## Application to Northern Rocky Mountain Territory

Just what opportunities may be in the northern Rocky Mountain territory, should the recommendations be followed, cannot be foretold. It is unlikely that any permanent long-time private forest growing operations will be sufficiently encouraged even with this help. The turning of the forest lands into State or Federal ownership, in the end, would still appear to be the only permanent solution. But, the forest credit facility could undoubtedly help - with other elements of cooperative assistance as recommended - to delay forced liquidation of existing properties. Thus industry and employment would be extended over a longer period than otherwise, and the slack period after the present commercial stands are used up would be somewhat postponed, or made less drastic when it arrives.

## RECOMMENDATIONS FOR COOPERATIVE SUSTAINED YIELD UNITS

The cooperative sustained yield unit recommendations would authorize applying national forest timber to the greatest possible extent in cooperatively furthering operations of private timber on a sustained yield basis.

In numerous instances an owner of timberland cannot adjust his operations to a sustained rate of cutting on his own lands, unless his timber is pooled with that on national forest lands. Such pooling is not dependably practicable under present laws requiring disposal of national forest timber under competitive bidding. There is now nothing to prevent any highest bidder on national forest timber offered for sale from building a new mill for its manufacture, or transporting it to a mill at some far-distant point. Either eventuality would upset the plan for a permanent stable-sized community dependent on a sustained supply of timber. In order to secure the desired ends, it is necessary for the Forest Service to have administrative authority to control better the logging and milling assignments of national forest timber.

The plan involves three major elements:

1. Agreement by the private owner that the method and rate of cutting on his own lands will conform to the requirements of the Secretary of Agriculture.
2. Assurance to the private owner of purchasing public timber during a specified period at full value as determined by appraisal, but without competitive bidding.
3. Transactions, including appraisals, to be safeguarded by full publicity.

This same plan may also be applied where only national forest timber is involved and the success of a sustained yield plan requires that the community involved in the logging and milling be predetermined.

Enabling legislation for this plan has already been instituted in what is known as the McNary-Doxey Bill, S.3208, which was introduced in both houses of Congress but has not yet passed either house.

In this region the Lincoln County situation is a good example of the need for such legislation, which will make it possible to insure that the full timber resources of the Kootenai Forest will be used to maintain the existing lumber industry in the Libby district instead of being dissipated at several community points with no sustained yield prospects for any of them.

The Clearwater district in Idaho is another place where the arrangement might perhaps be well applied.

There are a number of places throughout western Montana where smaller operations could perhaps be stabilized, as in the Bitterroot, or in the St. Regis district.

Adequate permanent forest land practices are the objective.

Public cooperation with regulation is a preferred means of attaining this objective because it follows the nationally accepted principle of fostering private initiative and opportunity. But when despite Federal aid, private owners cannot economically, or for other reasons do not, practice long-time good management of their holdings, then acquisition becomes the only practical answer.

In some forested areas public cooperation with regulation will largely meet the problem. But in the northern Rocky Mountain territory it promises, at best, the answer on less than a fifth of the commercial forest area. True, certain of the lands of at least one large company in northern Idaho are now under good management. But the complicated pattern of land ownership, the extent to which matured stands of timber have been cut, the extensive old burns on cut-over land, the high costs of rehabilitation of such lands, generally slow tree growth, the high costs of growing and marketing timber, these are all handicaps which practically preclude long-time forest management by most private owners. In fact only one operator of forest land manifests any intention of doing a good job with the future supply of logs in mind.

Evidence that others will not do so is in the present trends toward declining acreage in Idaho under cooperative fire protection, together with the trend of tax delinquencies on forest lands, absence of protection by private owners against blister rust, no purchases of young growth land by private owners for timber growing purposes, and untimely cutting in 50- to 60-year-old stands of white pine. More liberal Federal contributions for fire control cannot be expected to stop the trend in most of the forest area.

Lands, of course, supporting young stands of commercially desirable species within 20 to 25 years of commercial size, might, with augmented Federal aid, be held and managed by private owners. But this must be started very soon or it will be too late. The big unanswered question is, will land of this class be held in private ownership as young growing stock? Except for part of the holdings of one company, no evidence is at hand to encourage such belief and the promise that it will be done on a large scale is slight, indeed. Northern Idaho has 80 to 90 thousand acres of such young growth land. Montana has an as yet unestimated acreage of ponderosa pine in this class. All things considered, it appears inevitable that land of this class, detached from farm ownership, should pass to public ownership if the future is to be taken care of.

In eastern Montana, grazing for domestic stock or other values, justifies private owners in retaining title to dual-use lands and bearing the costs of reasonable fire protection.

Summing up, long-time forestry practices by private ownership should be encouraged where there is any hope of success. Public acquisition then becomes a last resort and applies to those lands which cannot profitably or will not remain in private ownership. Such lands must revert to a form of ownership that can carry a load over a long period with little or no financial return during the interim.

Public acquisition will, of course, continue necessary to round out publicly owned forest units.

#### What Public Agency is Likely to Acquire

Preferably, public acquisition should be county, then State, and finally Federal.

But there is no assured promise of constructive county ownership. Counties with limited incomes and lower-ing tax base, are hard pressed to continue vital inescapable activities. They should be encouraged to reorganize and become financially sound. Then "town forests" might follow.

State officials have, in instances, expressed a desire for the job. Rounding out State forests will increase the area without proportionate increases in costs. But the States are no richer than the aggregate wealth of the counties and even with Fulmer Act appropriations, it is problematical whether the States can expand State forests to an extent necessary to safeguard public interest. The State of Washington may be an exception.

While Federal acquisition should be a last recourse, the major part of public acquisition will likely devolve upon the Federal Government.

#### When to Acquire

Acquisition should certainly not be later than immediately after cutting. In a few situations in Montana acquisition of special bodies of mature timber is urgent. In Idaho and Washington the opportunity for sustaining local communities at near their present size is gone; acquisition of merchantable timber would have little effect.

#### What to Acquire

Acquisitions would be mainly of young growth and recently cut- or burned-overs, and should be limited to lands soundly classified as of no greater value for agriculture than for forestry.

Current estimates of acquisitions to be made, both inside and outside existing national forest boundaries, show: northern Idaho, 2,800,000 acres; northeastern Washington, 1,500,000 acres; Montana, 2,000,000 acres; total about 6,300,000 acres.

#### How Acquired

Acquisition can be through donation, exchange or purchase.

Past donations have been far greater than can be expected in the future since the majority of lands available, taxes paid up - have been acquired.

Lands going through county foreclosure run the risk of deterioration. Therefore delay in putting them under substantial administration sets back their yield of benefits while greatly increasing the cost of rehabilitation after acquisition.

It is too slow but exchange is little better, since it can apply to only 15,000 to 20,000 acres annually.

#### The Need

Needed badly are adequate financial provisions for purchase. This will enable blocking out ownership of cut-overs and young growth without costly and injurious delay. It would also provide for urgent acquisition of a few bodies of mature timber.

Federal authority for exchanges in Idaho outside the present national forest boundaries is needed. State legislation facilitating county exchanges with the United States is likewise needed.

Outlays alone considered, public acquisition may cost more than cooperation. Besides the cost of acquisition and tax reimbursement, full cost of protection and management is borne by the public. On the other hand, the full future returns will come to the public. These will be substantial.

Public acquisition is the surest. It can be speeded up by public demand. Cooperation with regulation should in the meantime contribute toward preserving forest lands from deterioration whether to be maintained under permanent private management or to be acquired.

Acquisition by purchase or through exchanges would be at fair prices, based on open market values.

Supplemental to Federal acquisition, more constant and more equitable payments to local taxing units is recommended in lieu of taxes lost through removal of private forest lands from taxation through incorporation in public forests. This element of THE PROGRAM would be equitable to the local taxing units, and would meet one of the major local reasons against expansion of Government ownership of land.

(Pages 62 and 63 eliminated.)

Past donations have been far greater than can be expected in the future since the majority of lands - taxes paid up - available have been acquired. With little exception, future donations will come from the counties after the lands have passed to county ownership through the route of tax delinquency of private owners.

It can be expected that exchange acquisitions will continue at the rate of about 15,000 to 20,000 acres annually.

The process through these first two means is far too slow. Lands going through county foreclosure run the risk of deterioration, and delay in putting them under substantial administration threatens a setback in their yield of benefits and a greatly increased cost of rehabilitation after acquisition.

Needed badly are adequate financial provisions for purchase. This will enable the blocking up into constructive ownership of cut-overs and young growth without costly and injurious long delay, as well as whatever urgent acquisition there is for a few bodies of mature timber.

Needed, too, is Federal authority for exchanges in Idaho outside the present national forest boundaries to enable taking advantage so far as it can go of this means, when in the public interest. State legislation facilitating county exchanges with the United States is likewise needed.

Outlays alone considered, public acquisition probably will aggregate more costly than cooperation, since besides the cost of acquisition and tax reimbursement advances, the full cost of protection and management, instead of only a cooperative cost, would have to be borne by the public. But on the other hand, the future return will come in full amount to the public, instead of to the private owners. No forecasts are made as to balances of public financial outlays against public financial returns, but it can be accepted that the returns will, when they arrive, be substantial. All the other far more significant and important benefits from keeping private land productive can be assured in no other way.

While public acquisition is the surest process toward one of the aims - safeguarding the existing productiveness of private forest lands - it also will probably be found slower for this purpose, only, than cooperation with regulation, since the latter could be effected without delay, while the outlays for purchase appear to be so great that from the standpoint of national economy they will have to be distributed over a period of years. Cooperation with regulation should in the meantime contribute toward preserving forest lands from deterioration, if not devastation.

Acquisition - except where, as in the past, owners will transfer land to the public by donation which is to be encouraged - contemplates paying the owner a fair price, based on open market values, either through cash purchase or through land exchange.

### The Justification

As a summarization, Federal acquisition is necessary to enable:

1. The earliest assured creation of a permanent forest economy in the territory, with the resultant best long-time benefit that is still possible to local dependent communities.

2. The earliest assured establishment of permanent and substantial protection and development measures, including restoration of wrecked or retrograded forests which present owners cannot afford.

3. The assurance that nonprofit-making beneficial utilities of high social and economic importance - watershed protection, recreation, wildlife - will be safeguarded and enhanced under a multiple-use management.

4. The application of effective labor seeking outlet during periods of depression.

5. The release of private owners or counties from the load and responsibility of forest lands submarginal for their ownership even with cooperative Federal help.

6. The blocking up and unifying of Federal forest properties which for any of the above reasons should remain or come into Federal ownership.

## REIMBURSEMENT IN LIEU OF TAXES

### The General Proposal

Any substantial movement of forest lands from private to Federal ownership, as would result from a widespread acquisition program as is here recommended, would seriously affect the revenues of local taxing units which have grown to depend very heavily on the taxes which owners of private forest lands have been paying.

The present reimbursement to local taxing units for loss of taxes on lands now in national forests is 25 percent of the gross receipts distributed to the counties containing national forests. (An additional 10 percent of gross receipts in any State is available for road and trail construction in that State.) The 25-percent money is allocated to each county on the basis of the proportionate national forest acreage in that county; lands as acquired are included in such base. The use of this income is limited to schools and roads.

Twenty-five percent payments currently in this region are (figures for F.Y. 1939):

Northern Idaho .....	\$41,499
Montana .....	48,974
Northeastern Washington (Pend Oreille County only) .....	5,669
Northwestern South Dakota .....	<u>528</u>
Total .....	\$96,670

In the past objections have often been raised to the continuance in Federal ownership of large acreages of land which, it was asserted, would, if in private ownership, provide greater tax revenue to local taxing units than the 25-percent return.

In theory this 25-percent payment is not niggardly. Such a tax payment - 25 percent of the gross income - on any property would be very high. The values of land, or any income producing property, are directly proportional to only the net returns. It is obvious that over any long swing a 25-percent "cut" of gross returns would be many times more generous than the usual tax assessment determined from net returns. This would be the situation wherever national forests have abundant and pretty fully utilized receipt-producing resources. But, for most national forests, especially in this region, receipts are far below those potential, because either the tree growth is mainly young, there is little demand for the resources, or the resources are disposed of at no or a nominal charge. So, in fact, current revenues to local units have been usually limited.

Compared with the \$96,670 figure for the aggregate 25 percent from this region's national forests for F.Y. 1939, it is estimated that about \$600,000 annually might have been the taxes on such of the national forest lands as are attractive enough to have been acquired, if permissible, and retained in private ownership.

Despite this situation there has been more or less general acceptance of the 25-percent provision. The large contributions to local financial welfare, through extensive road construction, through furnishing local employment, and through helping stabilize local economy in a number of other different ways has helped in such acceptance.

There are a number of advantages to local taxing units, coming out of Government acquisitions which should not be overlooked:

1. Generally, abused lands are transformed from a liability to be developed into an asset for local enterprise.
2. Back taxes are forced to be paid up.
3. The Government takes over more of essential services - like road construction and maintenance - which otherwise have to be carried by local taxation.
4. Nonrevenue-producing developments like for watershed protection, recreation, wildlife are undertaken which local taxing units would not make.
5. Local industry and labor and business are put on the way to greater stabilization.
6. Some of local government's administration costs are replaced by Federal expenditures.

But questions now are revived, especially with the expansion of a number of classes of Federal land acquisitions by several other agencies besides the Forest Service during the last five or six years, and the recommendations for a greatly expanded program of Federal acquisition of forest lands. Removed from taxation are lands previously on the tax rolls: not Federal or State lands never on the tax rolls. The embarrassment to the counties particularly gives rise to some strong objections to Federal acquisition and has resulted in a number of proposals either to prevent any further acquisition or else to change the present reimbursement provisions.

No figures are available for acquisitions by other agencies, but national forest acquisitions in the northern Rocky Mountain territory have up to 1940 aggregated, net:

Montana .....	153,000 acres valued at \$204,000
Idaho .....	403,000 acres valued at 533,000
Northeastern Washington	<u>275,000 acres valued at 239,000</u>

Total ..... 831,000 acres valued at \$976,000

Besides the contention that the national forest lands do not adequately contribute to local taxation revenues, there are several other objections to the present provisions, as:

1. Straight percent of current receipts does not yield a constant income to counties relying on it.
2. Some lands do not yield any receipts currently at all, and counties are hard put to replace all of income previously derived from taxes.
3. Distribution of receipts from Government lands, based on acreage within county, penalizes county having high values and hence making heavy contributions from lands within its borders - otherwise taxable; and unduly favors counties which otherwise would have low tax income. Generally this would smooth off in long run, but not where proportions of low-producing and high-producing lands are not evenly distributed between counties.
4. Counties are restricted to the use of the receipt income for schools and roads, whereas taxes could be assigned as local authorities decide.

Despite the many advantages of extension of Federal forest land ownership, it is still considered in many quarters that the tax losses are greater than the benefits. To meet the difficulties the Department of Agriculture favors changes in the provisions for payments to local counties.

The proposed remedies will cover national forests, Federal wildlife refuges, and lands held under title III of Bankhead-Jones Act. Distinction is made between lands originally held by the United States, as public domain, and those acquired through purchase, exchange, or donation subsequent to January 1, 1911. The latter are called "acquired" lands.

#### Recommended Plan

The recommended remedial plan provides for:

1. A contribution of 25 percent of gross receipts from Federal lands that have been withdrawn from the public domain and have never been a part of the local tax base. This is the same as at present.

2. From Federal lands that, through acquisition or in some other way, have been removed from the local tax base (a) a minimum contribution that, consisting of a reasonable percentage of the actual value of the property, might amount to a little less than what the average going tax returns would be if the property were subject to present tax systems, and (b) a maximum contribution of not to exceed 25 percent of gross receipts if, as, and when such minimum equals or exceeds the minimum contribution.

3. Stabilization of income by (a) using - instead of current receipts which fluctuate greatly - a running five-year average as a basis for the 25-percent contribution; and (b) by distributing the 25 percent of timber sales receipts - which vary considerably from year to year and as between forests and counties - on a State-wide basis, each national forest county to share therein in proportion to that part of the total value of all standing timber on national forest lands within each county, as compared to the State total (value to be appraised by the Secretary of Agriculture), while 25 percent of other gross receipts - which vary but little from year to year - are returned to the counties of origin.

4. For turning contributions over to the States, for allotment to the counties concerned, without restriction as to the purpose for which such receipts shall be used within these counties.

RECOMMENDED REMEDIES AND PROGRAM TO MEET THE NEEDS  
FOR STATE AND COUNTY LANDS

A number of the recommended program items would contribute in varying degrees to stabilizing the management of State forest lands: cooperative protection against fire, and against insects and disease, cooperative planting and cooperative sustained yield units; research and market extension; and forestry extension.

State forest policy statements must become living creeds to State land boards and not high-sounding expressions to be referred to but not applied. Hence State legislative action is necessary to establish forest land management of State lands for general public welfare instead of for only institutional gain. This may in some particulars require State constitutional amendments and possibly Congressional amendment of enabling acts.

For the county lands, provision is necessary to speed classification and zoning, and to facilitate public acquisition. As a corollary to the last, changes are necessary in methods of tax reimbursement to counties. Definite policies and procedures for transfers to the Federal or State ownership must be established in the counties.

Where handling of county lands in cooperation with other owners is practicable, county land forestry would benefit from similar cooperative expansion as in the case of State lands. The degree to which this latter possibility exists in the northern Rocky Mountain territory is problematical; its likelihood is very remote.



RECOMMENDED REMEDIES AND PROGRAM TO MEET PROBLEMS  
ON NATIONAL FOREST LANDS

1. To Overcome Inaccessibility: A stable adequate appropriation policy under which the totals for roads and trails in the national forests would average \$18,000,000 annually for the next ten years and \$5,000,000 annually thereafter. Of this, would come to the northern Rocky Mountain region for the next ten years, \$1,500,000 annually for forest development road construction, and for the next five years, \$100,000 annually for trail construction, plus \$550,000 annually on a permanent basis for maintenance of both roads and trails. Special provision must also be made for airplane fields; an estimate of amount of money required is not possible with present information but it probably would come to not less than \$500,000 for this region.

2. To Meet the Fire Problem: An increase of \$280,000 yearly, approximately a 54-percent raise over the present general average yearly allotment of \$520,000, is required in the northern Rocky Mountain region to build up the organization needed to do the fire job properly, during a normal fire season. In addition to this, allotments should be increased by about 10 percent to enable longer periods of employment outside the regular fire season as one of the means for stabilization of organization. The estimated needed increase to all regions is \$1,000,000, an increase of about 57 percent over the present general average of \$1,750,000 yearly.

3. For Planting Nonreproducing Lands: An increase of the present Forest Service authorization from the present \$400,000 annually to \$2,000,000, and continued annual appropriations of \$2,000,000. For the northern Rocky Mountain region the present annual allotment is \$45,000; this should be about \$80,000. In addition, increased allotments should be available for special road construction, hazard reduction, and brush removal; the road operations and a part of the hazard reduction would be provided for by parts of THE PROGRAM elsewhere described.

4. For Intensified Range Administration: An estimated \$700,000 annually needed for all regions; with about \$70,000 yearly to be allocated to the northern Rocky Mountain region.

5. For Blister Rust Control: For all regions, protecting the sugar pine as well as the white pine, \$13,900,000. For northern Rocky Mountain region - \$5,000,000 total on the basis of a nine-year program or around \$560,000 yearly, but much better if the project could be speeded up. The work in the national forests ought to be done at the same time with work on State and private forests which is estimated to cost an additional \$5,100,000 over a nine-year period.

6. For Administration of Recreation and Maintenance and Care of Public Recreation Facilities: \$1,000,000 annually for all regions, including an estimated \$60,000 yearly for this region.

7. For Improvement of Wildlife Environment, and For Necessary Expansion of Cooperative Work with the States: For all regions \$400,000 yearly, including some \$50,000 for this region.

8. For All Kinds of Improvement Work not otherwise provided for in THE PROGRAM, work which can be accomplished by the socially important lengthening of the guard employment period: For all regions \$2,000,000, of which some \$300,000 would be applicable to this region.

TO TAKE CARE OF PUBLIC DOMAIN FOREST LANDS

Legal authority for the President to make additions to national forests or other Federal reservations under organized management, or to substantially managed State units, together with the necessary administrative machinery for speedy and uncomplicated classification of the public domain, and the transmission of recommendations to the President for action, would dispose of this problem most easily.



## RECOMMENDED PROGRAM FOR RESEARCH

The situation, the needs, and the detailed recommendations for the research in the northern Rocky Mountain territory that are needed to guide numerous existing and recommended undertakings are covered in separate discussion entitled, "The Research Activities, Progress, Plans, and Appropriation Needs of the Northern Rocky Mountain Forest and Range Experiment Station" dated January 10, 1940.



A P P E N D I X



PROGRESS OF BLISTER RUST CONTROL THROUGH FISCAL YEAR 1941  
 (Estimated for 1941 in the Western White Pine Region -  
 Inland Empire)

<u>Working</u>	<u>Ownership</u>	<u>Acres Worked</u>	<u>Acres Unworked</u>	<u>Total Acres</u>
First	National forests	1,013,405	374,245	1,387,650
	Public domain	17,000	15,065	32,065
	State and private	820,195	430,495	1,250,690
	Total	1,850,600	819,805	2,670,405
Second	National forests	177,022	662,978	840,000
	Public domain	4,569	10,431	15,000
	State and private	137,831	507,169	645,000
	Total	319,422	1,180,578	1,500,000
Third	National forests	11,432	338,568	350,000
	Public domain	96	5,904	6,000
	State and private	10,677	248,323	259,000
	Total	22,205	592,795	615,000
All workings	National forests	1,201,859	1,375,791	2,577,650
	Public domain	21,665	31,400	53,065
	State and private	968,703	1,185,987	2,154,690
	Total	2,192,227	2,593,178	4,785,405

Second and third workings dependent upon completion of  
 previous workings.

. . . . .

Estimated Cost of A Nine-Year Program to 1950

National forests	\$5,037,000
Public domain	146,000
State and private	4,891,000



BRIEF OUTLINE OF  
A NATIONAL FOREST ECONOMY

I. What Is a Social and Economic Setting?

- A. Live in want in midst of plenty.
  - 1. Men want to work but can't find jobs.
  - 2. Low incomes.
  - 3. Low standard of living for one-half of population.
  - 4. National income is down.
  - 5. Agriculture is sick, but farmers can raise more.
  - 6. Idle money.
  - 7. Idle factories.
  - 8. Frontier is gone.

II. Natural Resources Are Background of Thriving Nation

- A. Where do forest lands stand in this situation.
  - 1. One-third of U. S. is forest land.
  - 2. We have enough forest land if we use it.
  - 3. Our forest land economy to date has been liquidation.
    - a. Three-fourths of our original stand of sawtimber has been cut.
    - b. Cutting second growth as fast as it grows and still steadily reducing old growth.
    - c. Growth must be increased 100 percent to meet real need of Nation.
      - (1) Area of extensive management must be increased three times.
      - (2) Area of intensive management must be increased ten times.
    - d. The chief value of one-fourth of the forest area is for products and uses other than timber.
      - (1) Watershed - important to almost everyone.
      - (2) Domestic livestock - carrying capacity of western range could be increased by one-half.
      - (3) Wildlife - coming back.
      - (4) Recreation - can yet be expanded.
      - (5) Rebuilds soils.
  - 4. Ownership of forest lands is crucial factor.
    - a. Complex ownership pattern complicates restoration program.
      - (1) Total forest land in U. S. 630 million acres.
        - (a) Private lands - 70 percent of total.

1. Three-fourths of commercial forest land.
  2. Two-thirds of important watersheds.
  3. Ninety-five percent of timber is cut from this area.
- (b) Public lands - 30 percent of total.
- |                     |       |          |
|---------------------|-------|----------|
| 1. Community        | 1.2%  | of total |
| 2. State            | 3.0"  | " "      |
| 3. Public domain    | 3.8"  | " "      |
| 4. National forests | 19.3" | " "      |
| 5. Other            | -     |          |

### III. What is the Program Required to Restore the Forest Resources?

- A. Help to remove inherent handicaps and stimulate private action.
  1. Federal and State cooperation to aid in:
    - a. Fire, insect, and disease protection.
    - b. Research.
    - c. Forest extension.
    - d. Reforestation.
    - e. Establishing cooperatives.
    - f. Forest credits.
    - g. More equitable taxation.
    - h. Public leasing, etc.
- B. Require practices by private owners which will stop destruction of the resources - keep land productive.
- C. Acquisition of about one-third of forest land in private ownership.
  1. Community.
  2. State.
  3. Federal Government.
    - a. To handle resources in interest of the public.
    - b. Make examples of good management to lead way for private owner.
- D. Legislation and appropriation to accomplish two objectives:
  1. Create and maintain clear-cut forest economy.
  2. Insure market for products.
- E. Require proper character of financing of Federal share of program - "human resource budgeting."
- F. Private owners, State, and community will make substantial contributions to supplement Government expense; 245 million for first 20 years.

### IV. What If This Program Could Be Carried Out?

- A. Should increase national wealth several billion dollars.
- B. Should furnish products and services of forest to meet real needs of people in abundance instead of scarcity.
- C. Should build up employment by three million people. Would also hire 300,000 for restoration process.

- D. Should increase purchasing power thus increasing domestic markets for agriculture, industry, and forests.
- E. Should rehabilitate agriculture in farm forest regions - increased opportunities for employment and income. Aid agriculture and reconstruction programs in this way.
- F. Increase national income 2.5 to 3 billion dollars.
- G. Federal expenditures in long run should be self-liquidating.
  - 1. From indirect Federal tax revenue from larger national income.
  - 2. From direct returns to Treasury from repayment of loans, etc., to private owners and States and from national forest receipts.
    - a. Returns should exceed current costs in 28 years.
    - b. Returns should exceed current costs and interest in 40 years.
    - c. Returns should retire all previous deficits in 72 years.

V. Forest Conservation Is A Vital Part of Our Entire Social and Economic Structure, and It Can No Longer Be Ignored or Neglected If We Want To Put Our National House in Order. WHAT ARE OUR LOCAL PROBLEMS?  
- Fred Mass, St. Joe N. F.



Table 1. Forest Land Statistics

Unit	Gross land area M acres	Forest land		Commercial forest lands		Commercial sawtimber areas		Commercial pole- sized area M acres	Commercial seedling and sapling M acres	Commercial nonrestocked cut-overs and burns M acres
		M acres	Per- cent land area	M acres	Per- cent forest area	M acres	Percent commercial forest area			
Northeastern Washington 1/ North Idaho Western Montana	3,627 12,525 15,829	2,644 10,330 11,741	73 82 74	2,452 6,867 8,950	93 66 76	422 2,606 4,552	17 38 51	993 1,798 2,027	883 1,479 1,792	154 984 579
Inland Empire	31,981	24,715	77	18,269	74	7,580	41	4,818	4,154	1,717

1/ Acreages adjusted to January 1940 to cover cut.

Table 2. Ownership of Commercial Sawtimber Areas

Ownership class	Northeastern Washington 1/		North Idaho		Western Montana		Inland Empire	
	M acres	Per-cent	M acres	Per-cent	M acres	Per-cent	M acres	Per-cent
Private	207	49	997	38	1,457	32	2,661	35
State and county	76	18	354	14	253	6	683	9
National forest	57	14	1,175	45	2,601	57	3,833	51
Other federal	82	19	80	3	241	5	403	5
Total	422	100	2,606	100	4,552	100	7,580	100

1/ Acreages adjusted to January 1940 to cover cut.



1. The first part of the document is a list of names and addresses. The names are written in a cursive script, and the addresses are written in a more formal, printed style. The list is organized into two columns, with names on the left and addresses on the right.

2. The second part of the document is a list of names and addresses. The names are written in a cursive script, and the addresses are written in a more formal, printed style. The list is organized into two columns, with names on the left and addresses on the right.

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Table 3. Timber Resources

Species	Volume (Zones 1 and 2) in Million Feet Log Scale			
	Northeastern Washington 1/	North Idaho 2/	Western Montana 3/	Total Inland Empire
Western white pine	430	9,963	574	10,967
Ponderosa pine	931	4,884	7,804	13,619
Others	1,905	21,992	23,740	47,637
Total all species	3,266	36,839	32,118	72,223
Number cedar poles	747M	6,271M	668M	7,686M

1/ Forest survey estimates adjusted for cutting to January 1940.

2/ Forest survey estimates.

3/ Best available estimate; not forest survey.

Table 4. Commercial Timber Resources by Ownerships  
and Principal Species

Ownership	Northeastern Washington 1/		North Idaho		Western Montana		Inland Empire	
	Million feet log scale	Per- cent	Million feet log scale	Per- cent	Million feet log scale	Per- cent	Million feet log scale	Per- cent

## Western White Pine

Private	207	48	4,456	45	97	17	4,760	43
State and county	32	7	1,844	18	54	9	1,930	18
National forest	187	44	3,567	36	423	74	4,177	38
Other federal	4	1	96	1			100	1
Total	430	100	9,963	100	574	100	10,967	100

## Ponderosa Pine

Private	482	52	2,077	43	3,740	48	6,299	46
State and county	163	17	550	11	646	8	1,359	10
National forest	25	3	1,953	40	2,588	33	4,566	34
Other federal	261	28	304	6	830	11	1,395	10
Total	931	100	4,884	100	7,804	100	13,619	100

## All Other Species

Private	917	48	8,390	38	6,653	29	15,960	34
State and county	249	13	2,982	14	1,470	6	4,701	10
National forest	541	28	10,213	46	15,085	63	25,839	54
Other federal	198	11	407	2	532	2	1,137	2
Total	1,905	100	21,992	100	23,740	100	47,637	100

1/ Adjusted for cutting to January 1, 1940.



Table 5. Average Annual Cutting Drain From Commercial Sawtimber Stands (Based on Four-Year Average, 1935 to 1938, Inclusive)

Species	Northeastern Washington (M Ft. B.M. Log Scale)			North Idaho (M Ft. B.M. Log Scale)			Western Montana (M Ft. B.M. Log Scale)			Inland Empire (M Ft. B.M. Log Scale)		
	Lumber	Other Forest Prod- ucts <sup>1</sup> /	Total	Lumber	Other Forest Prod- ucts <sup>1</sup> /	Total	Lumber	Other Forest Prod- ucts <sup>1</sup> /	Total	Lumber	Other Forest Prod- ucts <sup>1</sup> /	Total
White pine	24,710		24,710	350,700		350,700	15,476		15,476	390,886		390,886
Ponderosa pine	59,771		59,771	69,500	300	69,800	106,568	668	107,236	235,839	968	236,807
Other species	25,208	14,380	39,588	62,400	23,200	85,600	93,071	10,810	103,881	180,679	48,390	229,069
Total	109,689	14,380	124,069	482,600	23,500	506,100	215,115	11,478	226,593	807,404	49,358	856,762

<sup>1</sup>/ Fuelwood not included in other forest products as the inventory figures used do not include scattered sawtimber trees in young and cut-over stands.

Table 6. A Comparison of Percent of Species in Timber Inventory to Timber Drain

Species	Percent of Species in Timber Inventory	Percent of Species in Logs Cut for Lumber Production	Percent of Species in Total Cutting Drain
North Idaho			
Idaho white pine	27	73	69
Ponderosa pine	13	14	14
Others	60	13	17
Northeastern Washington			
Idaho white pine	15	23	20
Ponderosa pine	32	54	48
Others	53	23	32
Western Montana			
Idaho white pine	2	7	7
Ponderosa pine	24	50	47
Others	74	43	46



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ountain

